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WEEKLY PROGRESS REPORT  
DECEMBER 3-9, 1976  
SALT LAKE CITY OFFICE

MINERALS EXPLORATION	
DEC 13 '76	
R. P. BLANC	
D. A. NICHOLS	
W. E. PENNELL	
L. C. BOWE	
A. T. WILKINS	
CHIEF	

URANIUM

COLORADO

Great Divide Project, Moffat County

The following holes were drilled in the project area since the last report period:

<u>Hole No.</u>	<u>T.D.</u>
129419-1	765'
129536-1	799'
129526-1	1198'
129430-2	754'
129525-1	855'
Total: 5	4371'

Century Geophysical Company ran gamma-ray, resistivity and S.P. logs in each of the above holes. The gamma-ray logs indicated no favorable uranium mineralization.

It is estimated that the 1976 drilling will be completed in the area by December 15.

WYOMING (Reported by R. P. Barnes)  
Thunderbird JV

A report was prepared comparing and analysing the reserves recently reported by Cleveland-Cliffs with those computed by Getty Oil Company geologists and personnel of the Colorado School of Mines Research Institute.

Washakie Basin (Reported by K. A. Jensen, Land Department)

The law suit which was reportedly filed by Portland General Electric Company in Salt Lake City has been filed in the U. S. District Court in Wyoming and lists Thomas Kleppe, Secretary of the Interior, et.al. as Defendants.

The complaint states that Portland General had staked 1740 mining claims in Sweetwater County, Wyoming. In September, 1975, Portland General began an extensive drilling program which resulted in a discovery of potentially commercially valuable uranium deposits. Drilling was stopped after receiving conflicting reports from Federal and state agencies regarding the status of the lands. The BIM notified Portland Electric that it was without legal rights to enter upon the lands, which are withdrawn for Oil Shale, and has directed Portland Electric to vacate the claims and restore them to their original condition.

CVX 00577

Portland Electric claims relief under Article III, Section 3 of the Constitution, Violation of the Pickett Act, and Violation of Administrative Procedures Act. In general the allegations are: 1) the Executive Branch was not delegated authority to withdraw large tracts of land; 2) withdrawn lands be kept open for exploration and discovery of metalliferous minerals; 3) there is no factual basis for the withdrawal as oil shale lands.

The Salt Lake office will follow this suit and report on the outcome.

The Getty Oil Company petition for restoration of certain lands within the Oil Shale Withdrawal in Sweetwater County has been forwarded to the Secretary of Interior, by the BLM Office in Cheyenne, Wyoming, for further action.

FRONTIER SANDSTONE PROGRAM

New York (Reported by K. Rank)

Adirondacks

A general literature review began this week for the Adirondacks.

General

A lecture at the University of Utah this week by L. H. Lattman discussed the origin of caliche. His studies indicate that there are three basic caliche types: pedogenic, ground water and accreting. The ground water types are known to contain economic uranium mineralization where uraniferous, ground water drains calcic (basic) and uraniferous acidic terrains. Calcium carbonate plus uranium precipitate together to form syngenetic uranium deposits. The pedogenic (in situ) and accreting types do not contain economic uranium; these occurrences of caliche predominate in the United States. Most of the large caliche occurrences in the U.S. are formed by a combination of both aeolian carbonate and gypsiferous dusts followed by immediate local rainfall. Sulfate-reducing bacteria produce calcite from a mixture of gypsum and organic matter with hydrogen sulfide as a product. Our caliches contain algal-like material, native sulfur and are fetid. He demonstrated that most large caliche deposits in the U.S. are downwind from carbonate and gypsiferous sediments; they are not likely to contain economic uranium.

*R. D. Gypert m.*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

CVX 00578

WEEKLY PROGRESS REPORT  
NOVEMBER 26-DECEMBER 2, 1976  
Salt Lake City Office

URANIUM

MINERALS EXPLORATION	
DEC 6 '76	
R. P. BLANC	11/2
S. MUESSIG	11/2
D. A. NICHOLS	11/2
W. M. PENNELL	11/2
L. C. ROVE	11/2
J. T. WILLIAMS	11/2
FILE	

GENERAL: (Information taken from New Mexico News Letter)

The following companies discussed tentative plans for new mines and mills at the November 10 meeting with the New Mexico State Highway Department:

Kerr-McGee has plans for three new uranium mines--one in the Rio Puerco-Marquez area, another north of Grants in the vicinity of San Mateo, and a third near Churchrock.

Homestake is considering a mine on their property north of Grants in the Roco Hondo area.

Conoco plans to have mines at Crownpoint and on the Bernabe Montana Grant.

Exxon suggested the possibility of two mines and a mill on their L-Bar property south of Marquez and in the Santonio Valley.

Phillips is planning to build a mine on their Nose Rock property about 10 miles northeast of Crownpoint.

Gulf is considering three new mines: on Mt. Taylor, Mariano Lake, and east of Barrego Pass.

This would mean a total of at least 12 new mines and a number of new mills within the next 10 years.

COLORADO

Huerfano Basin Project, Custer County (Reported by R. P. Barnes)

Work has been completed on maps showing surface ownership and leases; mineral ownership, claims and leases; and the geologic structure on the base of the Farista Conglomerate. Work is in progress on a geologic cross section of the prospect.

Great Divide Project, Moffat County

The following holes have been drilled in the project area since the last report period:

Hole No.	T.D.
11935-1	930'
129331-1	644'
129431-1	908'
129428-1	760'

Total 3,242'

CVX 00579

None of the above holes contained any significant uranium mineralization.

If weather permits, the 1976 drilling will be completed during the next work period.

JOINT VENTURE - outside operated

URANIA EXPLORATION, INC. (Reported by K. Rank)

The annual technical meeting of the Crystalline Rockies and Belt Series Joint Ventures was held at Golden, Colorado on December 2, 1976. Our main effort in 1977 will be directed toward the total study and evaluation, target selection and testing of contact-type, vein-like mineral occurrences in both the Belt Series and Crystalline Rockies project regions. At least four prospects will be tested by drilling during 1976-1977, all in the Belt Series; in addition, four other areas will be studied in detail, including one area surrounding apparent stratabound uranium mineralization in Precambrian gneisses and schists. A related minor Belt project study will be directed toward evaluating the relationship between different types of geochemical samples. General reconnaissance will be conducted in south central Idaho and northeastern Washington-northern Idaho for radioactive Mesozoic-Tertiary plutons and their relationship to Precambrian contacts.

A detailed study for contact-type uranium mineralization in Colorado is nearly complete. Based on this study four general age-uranium mineralization periods have been established for contact-type mineralization: 1) Silver Plume granite and Idaho Springs Formation; 2) Cambro-Ordovician sediments in contact with Precambrian crystalline rocks; 3) Pennsylvanian-Permian sediments and Precambrian crystalline rock contacts; and 4) Cretaceous-Jurassic sediments in contact with Precambrian basement. The source of most of the known mineralization appears to have been derived from near-surface leaching of the Precambrian. As a result, about one dozen restricted prospective targets have been established; several of these appear to warrant ground follow-up. Of these, a few will be prospected. Similar detailed studies will be conducted in New Mexico and Wyoming.

*A. D. Gifford*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

WEEKLY PROGRESS REPORT  
NOVEMBER 19-25, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Great Divide Project, Moffat County

The following holes have been completed since the last report:

<u>Hole No.</u>	<u>TD</u>	<u>Date Completed</u>
129435-1	979'	11/16/76
129535-1	1065'	11/19/76
129534-1	1201'	11/20/76
129527-1	1172'	11/23/76
129330-1	649'	11/23/76
11936-1	802'	11/23/76
129332-1	736'	11/24/76

Fourteen holes remain yet to be drilled on this project. It is anticipated the program will probably require two more drill periods for completion.

SCOUTING (Reported by R. D. Cypert, Jr.)

South Dakota

Considerable uranium exploration work is going on near Edgemont, South Dakota. How many companies are operating in the area is not known at the present time. The TVA purchased the Edgemont mill and certain properties from Susquehanna Western and entered into a joint venture with American Nuclear Corporation on some of their properties in the western Powder River Basin and southern Black Hills area.

According to a TVA geologist, they hit an ore body in the southern Black Hills area. They have encountered seven roll fronts in the area at depths averaging 600 feet below the surface. They are presently blocking out ore with eight drill rigs; 6 rigs have been drilling for the past year. The TVA geologist indicated their last core hole contained 14 feet (in one interval) of 1% U<sub>3</sub>O<sub>8</sub>. The amount of reserves developed by the TVA was not given.

The ore body, according to the TVA geologist, occurs in a conglomerate of Wind River age (Eocene). It may occur in the Inyan Kara group of lower Cretaceous. American Nuclear wants to get the ore body into production within three years. Whether the Edgemont mill is to be reactivated is not known, but Ralph Lite of Hazen Laboratories was present when the writer obtained this information. Also present were Messrs. Leonard Taucher of American Nuclear and a gentlemen from a Canadian consulting firm.

All the above information was obtained from the TVA geologist after the social gathering dispersed.

MINERALS EXPLORATION	
NOV 29 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

CVX 00581

On a Rapid City TV station the night of November 23, a panel discussion was held concerning the large amount of exploration work being done in the area around Edgemont and the impact that it was having on the local schools, housing and economics. The panel was made up of state officials and local citizens.

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GENERAL

Messrs. Cypert, Gloyn and Rank were on vacation this week.

*Robert P. Barnett/alr*

RPB:alr

cc: Mr. Glenn E. McKinley

WEEKLY PROGRESS REPORT  
NOVEMBER 12-18, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Great Divide Project, Moffat County (Reported by R. W. Gloyn)

The drillers returned from break on November 14, 1976, and the following holes have been drilled:

129435-1	TD: 980' - completed	No anomalous count
129534-1	At 710' of planned 1200'	
	In progress	
129535-1	At 460' of planned 1100'	
	In progress	

Arrangements have been made for setting and cementing casing for four holes which will be using a blowout preventer. These holes should be completed and cemented by Nov. 23, 1976, and drilling on these holes should commence immediately after the Thanksgiving break.

Huerfano Basin Project (Reported by R. P. Barnes)

Work is in progress on a report on the results of the 1976 drilling program.

WYOMING

Washakie Basin, Sweetwater County (Reported by R. W. Gloyn)

Conversations with Ray Platt of Intra Search Inc. revealed the following somewhat confidential information:

1. Portland General Electric (Mr. Curtwright) has staked a number of claims in the Kinney Rim area of the Washakie Basin. These claims were staked unaware of the Oil Shale Withdrawal and were subsequently drilled. According to rumor, sufficient encouragement was found in the hole to warrant filing suit against the Government. Portland General Electric has filed suit against the Government and this suit was recorded in Salt Lake City.
2. An unknown company, using Intra Search as a service company, is active in the southern portion of the basin. Their program has been to acquire any available land particularly those valid mining claims staked prior to the Oil Shale Withdrawal. According to Mr. Platt their program has been academically successful. Target areas indicated by alteration effects shown on color photography have been drilled and uranium mineralization indicated. However, ore grade mineralization possibly discovered by drilling on unclaimed Government land is reportedly confined to Federal Government land. This company is eagerly awaiting the outcome of Portland General Electric's suit.

MINERALS EXPLORATION	
NOV 22 '76	
→ R. P. BLANC	
→ S. MUESSIG	
→ D. A. NICHOLS	
→ W. M. PENNELL	
→ L. C. ROVE	
→ J. T. WILLIAMS	
→ FILE	

CVX 00583

3. Union Pacific is quite interested in the area, and may be doing surface work and possibly drilling.

CCI JV (Reported by R. P. Barnes)

The meeting with Commonwealth Edison personnel to discuss the 1977 program at North Butte was postponed at the last minute.

GENERAL

Messrs. C. E. Wolfe of Petrotomics, H. F. Yde, Jr. of Houston EPRL, and C. H. Smith and R. D. Cypert, Jr. visited ARCO's in situ leach project near George West, Texas on November 11, 1976. This plant and operations was recently sold to U. S. Steel for \$50 million (reported) prior to ARCO's merger with Anaconda.

The plant is running approximately 2100 gpm's containing 35 ppm  $U_3O_8$ ; approximately 4 ppm is remaining in the solution. According to ARCO's exploration manager, the program is a success and the ore body is well suited for this type mining. Their reserves are approximately 20 MM lbs. in place. The recovery of the in-place reserves is not known at present, but the production people appear to be happy with the results.

The pattern (spacing) of the injection wells and recovery wells varies from 50'-100' apart depending on the configuration of the ore body.

*R.D. Cypert*

RDC,JR:alr

cc: Mr. Glenn E. McKinley



WEEKLY PROGRESS REPORT  
NOVEMBER 5-11, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Great Divide Project

The following holes were completed this week:

11943-1	Completed Nov. 6	TD: 1315'
129434-1	Completed Nov. 8	TD: 918'
129426-1	Completed Nov. 8	TD: 800'
129427-1	Completed Nov. 10	TD: 960'

None of the holes had significant anomalous radioactivity.

Presently two rigs are drilling around the clock on the Great Divide Project. Weather has not been a serious impediment to the drilling operations to date.

Mr. Robert Gloyn is presently mapping the surface geology of the Great Divide Project area.

WYOMING

CCI

Messrs. Robert Barnes, Richard Klatt and Fern Nowak of the Production Department attended the budget meetings for the Excluded and Thunderbird areas at Cleveland-Cliffs' Casper offices. Messrs. Barnes and Klatt offered suggestions and recommendations regarding the proposed 1977 drilling programs on the Thunderbird and Excluded properties.

A visit was also made to the Shirley Basin to see the new maintenance shop and the stripping of overburden in the new pit.

FRONTIER EXPLORATION (Reported by K. Rank)

A meeting was held at Wheatridge, Colorado, on November 9 with Uranerz, U.S.A., Inc. The objective was to discuss the pros and cons of the proposed Crystalline Rockies and Belt Series Joint Venture Work Plans, and to determine specific areas of agreement or disagreement between the nonoperators.

Belt Series Joint Venture

Four holes were drilled on Skookum Lake, Washington, this past week. Total drilled footage was 704 feet. The drilling is designed to explore

MINERALS EXPLORATION	
NOV 15 '76	
→ R. P. BLANK	
→ S. MUESSIG	
→ D. A. NICHOLS	
→ W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

CVX 00585

-2-

an anomalous granitic contact zone with Precambrian Beltian metasediments. A few anomalous zones were encountered in the granite but none were found in the metasediments. Many additional holes are planned.

*Robert P. Barnes*

RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00586

WEEKLY PROGRESS REPORT  
OCTOBER 29-NOVEMBER 4, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
NOV 8 '76	
→ R. P. BLANC	<i>[Signature]</i>
→ S. MOESSIG	<i>[Signature]</i>
→ D. A. NICHOLS	<i>[Signature]</i>
→ W. M. PENNELL	<i>[Signature]</i>
L. C. ROVE	<i>[Signature]</i>
J. T. WILLIAMS	
FILE	

COLORADO

Huerfano Basin Project (Reported by R. P. Barnes)

Hole No. 247113-3 was completed on October 31, 1976, at a depth of 1050 feet. This hole concluded the 1976 drilling program on the Huerfano Basin prospect. The hole contained 4½ feet of 0.01% eU<sub>3</sub>O<sub>8</sub> from 794 to 798.5.

The three-hole profile of holes 13-2, 13-1 and 13-3 (west to east) appears to have penetrated, respectively, the interior, the margin and the edge of a channel sandstone. Additional drilling in 1977 will have to be done to determine the areal extent of this channel and the significance of the contained uranium mineralization.

WYOMING

Great Divide Project (Sweetwater County)

The following holes have been drilled since the last report

H-129432-1	TD: 1173
H-119411-1	TD: 960
H-11941-1	TD: 826
H-129425-1	TD: 780

Drilling on H-11943-1 is at a depth of 620' of a proposed total depth of 1300'. The second rig should arrive on the property on Friday, Nov. 5. Hole depths are currently being "calculated" so that all holes go completely through the upper coarse grained sand section of the Hiawatha member (Twh4) and that every fourth hole completely penetrates the lower medium-fine grained sand section (Twh2).

FRONTIER EXPLORATION (Reported by K. Rank)

The Crystalline Rockies-Belt Series work plans for 1977 were submitted by the operator. A capsule of their main objectives is presented here.

Belt Series plans include:

- 4 drill targets with the possibility of 135 holes and 68,000 feet of drilling.
- Regional reconnaissance in four new areas.
- Multi-element studies of Midnight mine rock samples, and computer comparisons of moss and stream sediment relationships.
- 4 area studies for other than Midnight mine-type deposits. These are: quartz veins, pegmatites, pre-Beltian metamorphic environments, and volcanic regoliths.

CVX 00587

Crystalline Rockies plans include:

- Proposal to temporarily suspend further prospecting until one well chosen area has been selected.
- To develop a new model and subsequent targets for contact-type deposits (Pitch mine?)

This will be accomplished first by theoretical studies, subsequently followed by field prospecting.

Their proposed programs will be carefully considered during the remainder of November. The merits and disadvantages of their program will be presented at the annual technical and management meetings in Golden, Colorado, on December 2 and 3, 1976.

*R. D. Gault*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

WEEKLY PROGRESS REPORT  
OCTOBER 22-28, 1976  
SALT LAKE CITY OFFICE

URANIUM  
URANIUM

Messrs. J. Macdonald, Jerry Delane, George Riley and Ridge Corbett, Getty Mines, Limited, Canada and R. Gloyn, Ken Rank, and R. Cypert, Salt Lake office, visited the following mining properties during the past week:

MINERALS EXPLORATION	
NOV 1 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. S. ROVE	
J. S. WILLIAMS	

Monday, October 25, Shirley Basin, Carbon County, Wyoming  
Getty-Skelly-UJV operations

Monday morning was spent visiting the stripping operations and our new shop and office facilities.

Utah International

Monday afternoon was spent visiting their openpit mining operations. It was learned that their lower mining grade cut off is .02%  $U_3O_8$ ; whereas, it used to be .05%. The .01 material, when it can be identified, is stockpiled as lean ore and will be milled at some later date. The Uranium Department presently known as Utah International will be designated as Lucky Mac Mining after the GE-Utah merger has been completed. All of their ore zones are being developed with scrapers and mining is done with backhoes.

Tuesday, October 26, Powder River Basin, Converse County, Wyoming  
Exxon Corporation, Hyland Openpit Uranium Mine

Exxon's openpit mine was toured on Tuesday. Their mining operations are similar to Utah's; that is, they are mining with backhoes and developing ore with small, single-engine cat scrapers. Their mine cut off grade is .05%  $U_3O_8$ . All material below .05% down to and including .01%  $U_3O_8$  is being stockpiled and will be milled in the future. Since inception of mining, their average mine grade (open pit) has been .171%. The present average grade for the underground material is .15%. They are presently running 3,000 tons per day through the mill. They have a good, clean, well-organized mining operation. Since going to the lower cut-off grades, more emphasis is being placed on technical equipment to be used and tighter grade control.

Wednesday, October 27

Wednesday morning was spent with Century Geophysical Company officials discussing and observing their new logging trucks and techniques.

Wednesday afternoon was spent traveling to Gallup, New Mexico.

CVX 00589

Thursday, October 28

Kerr McGee's Church Rock Mine, McKinley County, New Mexico

Kerr McGee's Church Rock underground mine was visited on Thursday and the following information was obtained:

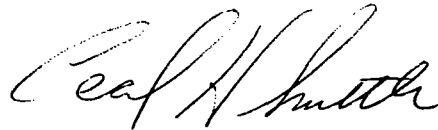
- Item 1 Mine shaft depth 1851 feet.
- Item 2 Shaft sinking and mining costs not obtainable. Evidently, their mining costs are embarrassing at this stage of their operations.
- Item 3 Ore reserves as of 1977 mining, estimated to be 11MM lbs. U<sub>3</sub>O<sub>8</sub> but they are still developing in the nearby areas.
- Item 4 Cost to sink a 60" ventilation shaft is \$1.6 MM (approximately \$900.00 a foot).
- Item 5 The ore is being shipped to their Ambrosia Lake Mill.
- Item 6 Average mine grade they would not discuss but it appears, by visual inspection, to be between .15% and .20% U<sub>3</sub>O<sub>8</sub>.
- Item 7 They plan on sinking at least three additional mining shafts in the area.
- Item 8 At present, they are pumping 3,000 gallons of water per minute from the mine and they expect this to increase to five or six thousand gallons per minute.
- Item 9 Mining conditions are not good.
- Item 10 The mine is located on Navaho land and they are forced to use Navaho labor in a large part of their operations.
- Item 11 The ore is produced from the Westwater Canyon member of the Morrison formation (Jurassic in age).
- Item 12 They are presently spending \$2 MM a year on exploration drilling in the area.
- Item 13 Their ore sales are based on an old contract with no escalating clause for price increases. (The selling price is probably between \$8.00 and \$12.00 per pound).
- Item 14 The ore extending to the north from their present mining operations is spotty and the continuity of the ore loads is very poor.

-3-

Messrs. Gloyn, Rank and Cypert will visit Pioneer Nuclear's office on Friday to review the Ignacio Chavez Uranium Joint Venture operations.

COLORADO (Reported by R. P. Barnes)  
Huerfano Basin Project

Hole No. 247113-3 is at a depth of 990 feet. Subzero cold weather, snow and mechanical breakdowns have delayed drilling; however, we anticipate completing the hole in the near future.



RDC,JR:mdc

cc: Mr. Glenn F. McKinley

CVX 00591

WEEKLY PROGRESS REPORT  
OCTOBER 15-21, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
OCT 25 '76	
R. P. BLANC	RSB
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	WMP
L. C. ROVE	
J. T. WILLIAMS	
FILE	

Messrs. C. H. Smith and R. D. Cypert, Jr., from the Salt Lake office, attended ERDA's Uranium Industry Seminar held in Grand Junction, Colorado on October 19-20, 1976. The meeting was well organized and several interesting papers concerning the uranium industry were presented. Approximately 550 industry representatives were present compared to 400 attending last year's session.

COLORADO (Reported by R. P. Barnes)  
Huerfano Basin Project

Hole No. 13-3, an easterly offset of about 1/4 mile to hole No. 13-1, was at 620 feet on Thursday evening (Oct. 21) and drilling ahead. The hole is expected to be completed this weekend. This is the final hole to be drilled in the project area this year.

Results of this hole will be included in next week's report.

Great Divide Project

Two holes have been drilled in the project area since the last report period. The holes are as follows:

<u>Hole No.</u>	<u>T.D.</u>
11944-2	1374'
129433-1	1090'

Two radioactive kicks (anomalous zones do not approach ore grade material) were encountered in Hole No. 11944-2. These kicks occur at the top and bottom of a sand shale contact at depths of 600' and 640' below the surface. The significance of these anomalies is not known at present. Due to sample contamination, it has not been determined if the sand between the kicks is altered. If the sand is altered, then the anomalies may possibly indicate the presence of a roll front in the area. If no alteration is present, then the anomalies probably indicate only a lithologic change in the sediments. Alteration is more difficult to identify in the Washakie Basin and Great Divide areas than in the mineralized trends in the Powder River and Shirley Basins.

The second rig is scheduled to be back in the project area within the next 10 days.

*R.D. Cypert Jr.*

RDC, JR:alr

cc: Mr. Glenn E. McKinley

CVX 00592



MINERALS EXPLORATION	
OCT 20 '76	
R. P. BLANC	BS
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	W
L. C. ROVE	W
J. T. WILLIAMS	
FILE	

## GENERAL

COLORADO

Hole No. 247113-2 was completed at a total depth of 1205 feet and logged on October 12, 1976. The hole entered the Cretaceous Pierre Shale at 1013' and a Tertiary dike or Precambrian granite at 1152. Spiky anomalous radioactivity extends from 740 to 1013 feet. The count is generally lower than that in No. 247113-1. However, the peak count of 2500 cps at 866.5 to 867 (equals 0.5 feet of 0.11%  $\text{eU}_2\text{O}_8$ ) was better than that in 13-1.

We presently plan to drill one more hole on the Huerfano Basin Project this year.

The following holes were drilled in the project area since the last report period:

Hole No. 11944-1	TD: 1140' - trace of radioactivity in sand-shale contact
------------------	--

Hole No. 11949-1      TD: 1488' - barren

The drill crew is presently taking a work break (4 days) and are scheduled to resume drilling on Oct 17.

Robert Gloyn is presently in the project area doing surface mapping.

NONSANDSTONE

A meeting of the Joint Venture partners was held at Golden, Colorado, on October 12, 1976. The purpose of the meeting was: (1) to discuss the budget and work plans for the remainder of 1976; (2) to gain some insight on Urania's 1977 work plans, and (3) review Mokta's management reorganization within Urania.

**CVX 00593**

Urania will be collecting, compiling and evaluating all previous data acquired during the past three years. Total expenditures for the next three months will be around \$90 M. Field work during this period will be minor.

Although a work plan has not been proposed for 1977, one will be prepared before November. Urania plans to take advantage of the knowledge gained in the past three years and apply it to the areas that apparently present the best exploration opportunities. The proposed budget for 1977 will be on the order of \$300 M.

Mokta has announced some organizational changes within Urania. This includes: a new replacement for Marcel Tabouret; he will be replaced by Jean-Claude Chauveau who is now the Executive Vice President of Urania, Tony Durand as Exploration Manager, and Regis Cambou has been named as the Crystalline Rockies Venture Manager. John Rostoll may become a separate Project Manager on certain future projects. C. S. "Nick" Ferris will no longer be responsible for the Joint Venture, but will remain in the organization.

The nonoperating partners expressed their concern for the future of the Crystalline Rockies venture, but also showed a measure of optimism with respect to our Belt Series project. The Belt Series project has been able to define several promising prospects. Some of these will be drilled this year.

*R. D. Cyfert, Jr. per*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

WEEKLY PROGRESS REPORT  
OCTOBER 1-7, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Huerfano Basin Project

Hole No. 247113-2 is at a depth of 780' of a planned total depth of 980 feet. It is expected to be completed by Saturday night, October 9.

Great Divide Project

The following holes were completed during the week:

H-119512-1	TD - 1490'
H-11947 -1	TD - 1500'
H-11948 -1	TD - 1400'

Hole 11945-1 is at a depth of 860' and should be completed Saturday.

The Century representative on the project, Mr. John Erickson, has suggested that the logging unit without modification can be used to run road radiometric traverses. There will be no additional charge to run this survey other than the excess mileage charge which is expected to be minimal if at all. Preliminary traversing will begin next week to test the utility of this approach.

WYOMING

Washakie Basin Project

Partial assay results on the 1976 core holes have been received. A summary of the results is given below:

<u>Hole No.</u>	<u>Footage</u>	<u>Century Probe</u>	<u>Footage</u>	<u>%eU<sub>3</sub>O<sub>8</sub></u>	<u>Chem.U<sub>3</sub>O<sub>8</sub></u>
A-36-76-C1	474.5-475.5	0.06	476.7-477.0	.046	0.064
A-36-76-C2	459 -461	0.014	459 -461	0.013	0.022
A-36-76-C3	459 -461.5	0.084	460 -461.5	0.053	0.058
			(Upper 1' not cored)		
A-36-76-C3	463.0-471.5	0.120	463 -472	0.075	0.101

Saratoga Basin

Three hundred and fourteen claims have been staked thus far in the northern target area.

MINERALS EXPLORATION	
OCT 11 '76	
→ R. P. BLANC	
→ S. BRIDGES	
→ D. A. NICHOLS	
→ W. M. PENNELL	
→ L. C. ROVE	
→ J. T. WILLIAMS	
FILE	

CVX 00595

SOUTH DAKOTA

Enning Project

All involved potential lessors have been contacted and lease forms mailed out. At present, three have been signed and returned, which represents 1514 acres.

URANIA EXPLORATION INC. (Reported by K. Rank)

Belt Series Project

Claim staking in the Zero Creek area, northern Bonner County, Idaho, is underway. Thirty-six claims are being located. The claims are situated next to Conoco and Pechiney claim blocks. Our claims, located along a Precambrian metasediment-Cretaceous granodiorite contact zone, cover stream sediment and moss anomalies.

Geochemical results from our Huckleberry Bay property, near Priest Lake, Idaho, are showing some definite anomalies. Our best anomalies, based on available data, shows at least one area, 1600 by 800 feet, with good uranium soil values. These values have a range between 3 and 88 ppm U. It is worth noting that soils over the Midnight Mine deposit yielded values of less than 100 ppm uranium.

*R. W. Slay -*

RWG:alr

cc: Mr. Glenn E. McKinley

WEEKLY PROGRESS REPORT  
SEPTEMBER 24-30, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Great Divide Project

Drilling in the project area has been shut down since Monday, Sept. 27 due to mud pump repairs. Parts have been difficult to obtain due to strikes in the Parts Department of the Failing Manufacturing Company. Plans are to resume drilling on October 2.

Huerfano Basin Project (Reported by R. P. Barnes)

Hole No. 247113-1 was completed on September 27, 1976. The hole was drilled to a total depth of 980 feet and encountered the Pierre Shale at 971 feet. This hole has an anomalously radioactive interval that extends from 798 feet to 971 feet. The hole averages 0.01%  $eU_3O_8$  from 798 to 860 feet with a one-foot peak of 0.07%  $eU_3O_8$  at 810 feet. From 960.5 to 971 the hole averaged 0.03%  $eU_3O_8$ .

This hole is located about one mile from the closest property line and about two miles from the nearest adjacent drill hole. The next hole will be located about one-quarter mile due west. Drilling should commence on it on October 1, 1976.

Thunderbird Joint Venture

The report on the proven ore reserves on the 13 mineralized areas has been completed and will be forwarded to Los Angeles for evaluation and distribution.

NONSANDSTONE

Urania Exploration, Inc. (Reported by K. Rank)

Uranerz U.S.A., Inc. is spending part of this week and next visiting the Belt Series prospects. They will review with the project manager the most recent geochemical results, make a tour of the Midnight Mine, and visit each of our primary prospect areas. Messrs. Ray Barkley and Eberhard Mueller-Kahle of Uranerz will make the visit.

Urania has begun an emanometry survey at Coffin Top Mountain, Boulder County, Colorado. This survey will attempt to define the source of uranium mineralization found in our stream sediment survey in 1975. Sixty-two claims have recently been staked which cover some of our stream sediment anomalies.

MINERALS EXPLORATION	
OCT 5 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

CVX 00597

Follow-up on some early stream sediment anomalies in the West Needle Mountains project has been completed for this season. Results of this follow-up sampling will not be available for several weeks.

Several Urania field geologists began their reconnaissance of the Medicine Bow Mountains, Wyoming this week. Their major efforts will be directed toward stream sediment sampling in conjunction with evaluation of major unconformities, ancient regoliths and major structural features in Precambrian rocks younger than 1.9 b.y.

*R. D. Gupta*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

CVX 00598

WEEKLY PROGRESS REPORT  
SEPT. 17-23, 1976  
SALT LAKE CITY OFFICE

MINERALS EXPLORATION	
SEP 27 '76	
R. P. BLANC	1/16
A. NICHOLS	1/16
M. PENNELL	1/16
Z. ROVE	1/16
J. WILLIAMS	1/16

URANIUM

COLORADO

Great Divide Project (Reported by R. D. Cypert, Jr.)

Since last report period, two holes have been drilled in the project area. Hole 1, Sec. 11-11N-85W, was drilled to a total depth of 1460', and Hole No. 1, Sec. 6-11N-94W was drilled to a total depth of 1500 feet. No uranium mineralization was encountered in either hole. The rig has been moved to the third hole and is drilling ahead.

Huerfano Basin Project

The second hole, No. 247113-1 is presently at a depth of 700 feet and drilling ahead. The first hole, a one-quarter mile offset to the hole with a thick anomalously radioactive section, also encountered the same zone. The best interval within this zone was an 11-foot thick section from 1037 to 1048' of 0.01%  $^{238}\text{U}_3\text{O}_8$ .

CRYSTALLINE ROCKIES JOINT VENTURE (Reported by K. Rank)

Ray Barkley and Eberhard Mueller-Kahle of Uranerz, U.S.A., made a visit with John Rostoll of Urania to our Coffin Top anomaly, Boulder County, Colorado. Dr. Mueller-Kahle reports that this anomaly, in his opinion, is not impressive; stream sediment anomalies are probably much higher than they normally would be if good stream sediments were present. Instead, swampy, trashy, moss and fern laden streams may be yielding false anomalies. There are no apparent areas where economic mineralization might be found.

*Robert P. Barnes*

RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00599

WEEKLY PROGRESS REPORT  
SEPTEMBER 10-16, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
SEP 20 '76	
R. P. BLANC	<i>[initials]</i>
S. MUESSIG	<i>[initials]</i>
D. A. NICHOLS	<i>[initials]</i>
W. M. PENNELL	<i>[initials]</i>
L. C. ROVE	<i>[initials]</i>
J. T. WILLIAMS	<i>[initials]</i>
FILE	

GENERAL

Kenneth Rank attended ERDA's uranium geophysical technology symposium in Grand Junction, Colorado, this week. The main topics discussed centered on airborne technology development, airborne radiometric data processing, down-the-hole U measurement, emanometry, helium gas detection and radon track etch techniques. There were over 400 attendants at the meetings.

COLORADO (Reported by R. P. Barnes)  
Huerfano Basin Prospect

Drilling resumed on September 10, 1976. The first hole, a northern offset to the hole with a thick anomalously radioactive interval is presently at 960 feet.

WYOMING (Reported by R. P. Barnes)  
Thunderbird Joint Venture

In-house estimates of the proven reserves on the Joint Venture properties are nearing completion. A report on these studies should be completed in the near future. Intercept maps for the 13 areas have been forwarded to the Colorado School of Mines Research Institute. They estimate that the statistical estimates of the reserves for each area should be completed by the end of October.

Washakie Basin Project

The 1976 Washakie Basin drilling program was completed during the last report period. The rig is being moved to the Great Divide project and drilling will resume on September 17.

The following holes were completed during the last two drill periods and have not been previously reported.

Phase I Drilling

16-97-16-2	TD 1000'	17-97-36-1	TD 1000'
16-96-16-2	TD 1000'	16-97-16-1	TD 1000'
16-96-36-1	TD 1000'	17-96-36-1	TD 1000'
17-97-37-2	TD 1245'	16-95-36-1	TD 1000'
17-96-36-2	TD 1000'		

CVX 00600



Gamma-ray logs from the above holes indicated no ore grade material but some good thick sands with traces of uranium mineralization were encountered. All of the above holes were on very wide-spaced drill centers.

#### NONSANDSTONE

##### Crystalline Rockies Joint Venture (Reported by K. Rank)

A few days were spent reviewing Urania's work results in the southern and central Sawatch Region, Colorado. Of primary interest were several shear zones at about +12,000 feet elevation. However, most are beginning to agree these have no economic potential. There is no significant alteration, no anomalous radioactivity in the shear zone, no secondary U minerals, no hydrothermal gangue vein minerals, weak limonite staining, and minor hematite. Mr. C. S. Ferris, R. Barkley, E. Mueller-Kahle all agreed that the area should be dropped from further consideration.

##### Belt Series Joint Venture

Progress in the Belt Series has been slow this season due to laboratory delays in returning assays. Otherwise, the project is progressing at a reasonable rate. The status of the four main target areas is:

1. Huckleberry Bay, Idaho. Sampling of rock, soils, stream sediments, conifer stems, needles, cones, and moss is complete. However, only 10 percent of the samples have been returned from the laboratory. These are beginning to show some anomalous trends. The soil anomalies range from 4 to 50 ppm U; moss samples are as high as 1.26% U. We are optimistic that this area will be drilled this year.
2. Chamokane Creek, Washington. This represents a geologic target concealed by Tertiary overburden. A suitable lease with private land owners is being pursued. This property may be drilled this year.
3. Skookum Lakes, Washington. Results from samples taken months ago have just begun to come back from the lab. No anomalies are present from 10 percent of the available analyses.
4. East River, Idaho. All analyses are available. No anomalies were detected. This project area is being dropped.

Many other new areas are being radiometrically and geochemically tested. These new areas are all underlain by Beltian metasediments or Mesozoic-Tertiary plutonic rocks. Our main targets are at the contacts of these rock types.

CVX 00601

GENERAL (Reported by K. Rank)

Tony Durand, Chief Geologist of AMOK, has been named new exploration manager for Urania Exploration effective November 15. Jean-Claude Chauveau will replace Mike Benoit as administrator. Chauveau is a geophysicist. Regis Cambou has been named as project manager for the Crystalline Rockies program. C. S. "Nick" Ferris resigned; he turned down a consulting position offered to him by Urania.

*R.D. Gorton*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

CVX 00602

WEEKLY PROGRESS REPORT  
SEPTEMBER 3-9, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
SEP 13 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

COLORADO

Great Divide Project

Mr. Robert Gloyn spent the week field mapping the Great Divide prospect area.

Huerfano Basin Project

Babco moved their drilling equipment into the area this week. Drilling is expected to commence shortly.

WYOMING

CCI-Thunderbird Joint Venture

Revisions of the text for the statistical reserve estimates for the Thunderbird area were received this week in Salt Lake from the Colorado School of Mines Research Institute. They have completed the North Rolling Pin area and are currently working on the Mud Spring, Dry Willow, Hank, C-Line and Van Buggenum areas. Independent estimates of the proven reserves by the block technique have been completed by the Salt Lake staff for these areas.

NONSANDSTONE

Mr. Kenneth Rank spent the week visiting Urania's office and field projects in the Sawatch and near Spokane.

Robert P. Barnes

RPB:alr

cc: Mr. Glenn E. McKinley

APPROVED

Carl H. Smith

CVX 00603

WEEKLY PROGRESS REPORT  
AUGUST 27-SEPTEMBER 2, 1976  
SALT LAKE CITY OFFICE

MINERALS EXPLORATION	
SEP 7 '76	
→ R. P. BLANC	
→ S. HUSSENG	
→ D. A. NICHOLS	
→ W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

URANIUM

COLORADO (Reported by R. P. Barnes)

Huerfano Basin

A new contractor has been hired to drill the Huerfano Basin prospect. We expect to resume drilling after Labor Day.

WYOMING

Thunderbird Joint Venture

Work continued this week on compilation of the proven reserves for the Thunderbird Joint Venture. Six areas are complete and five areas are presently being checked. The remaining two areas are being revised to reflect the results of recent drilling.

Washakie Basin Project

*What Date?*  
Last week's drill footage has not been reported to the Salt Lake City office as of this date. The drill data and results will be included in next week's report.

It is anticipated that the 1976 drilling program will be completed and the rig moved to the Great Divide project by next report period (one rig is being moved to the Huerfano project.)

NONSANDSTONE (Reported by K. Rank)

A report on improving our nonsandstone uranium exploration effort was begun this week. A comparison of Urania's work with our own group's work is being evaluated. The result of this review will be to propose possible exploration alternatives in 1977. This report will be completed next week.

RDC,JR:alr

cc: Mr. Glenn E. McKinley

APPROVED

*R.O. Cyphers*  
*Cal H. Smith*

CVX 00604

— MR Rove  
9/13

WEEKLY PROGRESS REPORT  
AUGUST 20-26, 1976  
SALT LAKE CITY OFFICE

MINERALS EXPLORATION	
AUG 30 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

URANIUM

Dr. S. Muessig and Mr. D. A. Nichols visited the Salt Lake City office on August 23 and 24 to review the Minerals Department's proposed 1977 capital and operating budget and planned exploration program.

CALIFORNIA - Scouting (Reported by K. Rank)

Framco finished drilling 18 holes in Crismar Mining Company's uraniferous pegmatite near Barstow, San Bernardino County, California. About 9,000 feet of drilling in the 100-foot wide zone has indicated that mineralization extends to at least 1000 feet vertically. The average grade is estimated to be about 0.05%  $U_3O_8$ . Framco has relinquished their option on the property.

*This not one?*

COLORADO

Huerfano Basin Prospect (Reported by R. P. Barnes)

Drilling was terminated this week because of the continued inability of the contractor to perform to our satisfaction. We expect to attempt to continue the drilling program with a different contractor in early September.

WYOMING

Washakie Basin (Reported by R. W. Gloyne)

The following holes were completed during the week:

Phase I Drilling

1698-36-1	TD: 1000'	No anomalous radiation
1697-36-1	TD: 1000'	2½X Bkg @ 892'
1697-36-2	TD: 1000'	No signif. radiation

Phase III Drilling

	Sec. 36-T15N-R98W	
A-76-31	TD: 600'	No signif. radiation
A-76-32	TD: 600'	" " "

It is expected that the Washakie Basin drilling will be completed by September 8, 1976.

CVX 00605

Saratoga Basin

All of the raw subsurface data have been collected and the compilation is nearly completed. Preliminary results indicate the presence of a meandering, clean, arkose channel with an estimated width of 2-3 miles extending north from Saratoga. Individual sands within this channel range from 40 to 100' thick. More importantly, slight gamma ray anomalies are present within these sand units. A meeting with Mr. Gorski is scheduled for next Tuesday at which time the data will be reviewed and hopefully the more favorable target areas can be selected.

*R. D. Gypster*

RDC,JR:alr

cc: Mr. Glenn E. McKinley

CVX 00606

WEEKLY PROGRESS REPORT  
AUGUST 13-19, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
AUG 23 '76	
R. P. BLANC	10/12
G. MESSING	7/2
D. A. NICHOLS	
W. M. PENNELL	10/12
L. C. ROVE	
J. T. WILLIAMS	
FILE	

COLORADO (Reported by R. P. Barnes)

Huerfano Basin Prospect

Two holes were completed this week: Hole No. 25712-1 was drilled to 832' and Hole No. 247115-1 was drilled to a total depth of 695'. The rigs have been moved to Hole No. 247123-1 and 247114-1.

During a three-day visit to the field by Mr. Robert Barnes, it was learned that Utah International has claims to the south of our land block. They are believed to have drilled 10 to 12 holes on their properties this year. Pioneer Nuclear is planning to drill one hole on their claims to the southwest of our block. They intend to begin this next week. Cominco will drill about 18 holes on their property south of us in September.

URANIA EXPLORATION, INC. (Reported by K. Rank)

William Carlson, Chief Geologist of Uranerz, U.S.A., Inc., has announced that he will be leaving his post with Uranerz later this year. Raymond C. Barkley, formerly of Kerr-McGee Corporation, and more recently of Continental Oil Company, will replace Mr. Carlson. Mr. Carlson, in my opinion, has done a good job in representing his company's position with respect to our Crystalline Rockies-Belt Series Joint Venture.

UTAH

Marysvale Project

Sampling, ground radiometrics, and general reconnaissance in the Marysvale area has revealed that the property offered to Getty Oil Company by Justheim Petroleum Company does not offer the potential of a large, open pit, low grade uranium deposit. The majority of the 200 samples analyzed gave results of less than 0.01% U<sub>3</sub>O<sub>8</sub>. The Justheim property submittal was formally rejected.

WYOMING

Washakie Basin, Sweetwater County (Reported by R. W. Gloyn)

The following holes were completed during the week:

<u>Hole &amp; Location</u>	<u>Total Depth</u>	<u>Radiometric</u>
A-36-76-33	600'	Barren
13-96-16-1	1000'	Barren
13-98-13-1	1000'	Tr. @ 640'

CVX 00607

The three core holes have been logged, split and samples sent to Skyline Labs for assay. All samples are to be assayed for  $U_3O_8$  (chem.), Mo. Se, sulfide sulfur, organic carbon,  $\gamma$  equiv.  $U_3O_8$  and  $\beta$ - $\gamma$  equiv.  $U_3O_8$ . In addition, selected samples are to be run for V and a spec. scan. It is tentatively thought that "altered and unaltered" sand can be visually recognized in the core but that this distinction is strongly subjective and is not based on any presence-absence relationship. There appears to be no significant difference between altered and unaltered sand for the detrital grains. Both are very low in visually identifiable carbon and pyrite; both have fresh feldspar in which polysynthetic twins are conspicuous, hornblende and biotite are equally abundant and the quartz shows no differences in etching or frosting. There does appear to be some differences in the matrix but it is not yet certain how much is due to alteration. The presumed unaltered sand is characterized by a moderate amount of a blue green-white clay-silt matrix whereas this matrix is nearly lacking in altered sand and a light tan noncalcareous cement fills much of the void space between grains. Peak count occurs at the contact but with strong count also occurring in the altered(?) sand.

Saratoga Basin

A study of oil well drilling cuttings by Dan Gorski confirms the presence of a favorable arkosic wedge in the Saratoga area. This wedge apparently is best developed south of Saratoga but extends at least 12 miles to the north. This wedge is characterized by moderate to abundant "granitic" derived clastics and appears to facies change to the west to tuffaceous medium to fine grained sands and siltstones and to the east to medium grained second generation sands. Pyrite is abundant and carbon trash has been recognized. A report on the sub-surface compilation should be completed by early September.

R.O. Gypm.

RDC,JR:alr

cc: Mr. Glenn E. McKinley



WEEKLY PROGRESS REPORT  
AUGUST 6-12, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
AUG 16 '76	
R. P. BLANC	RB
S. MUESSIG	
D. A. NICHOLS	LA
W. M. PENNELL	
L. C. ROYE	WJ
J. T. WILLIAMS	
FILE	

COLORADO

Huerfano Basin Project, Custer County

Hole No. 24-71-25-1 was drilled during this report period and was logged to a depth 1282'. A radioactive anomaly emitting 400 cps (1' thick, .01% eU<sub>3</sub>O<sub>8</sub>) was encountered at a depth of 1015 feet below the surface. The radioactivity occurs at a sand-shale contact. At present, the significance of this anomaly is not known and will not be determined until additional correlation work is done in the area.

The stuck drill pipe mentioned in last week's report has been abandoned. The loss of this pipe (due to twisting off) is from a driller's error and the loss of the hole and drill pipe is on the contractor.

On August 8, 1976, the second rig was drilling ahead and the bit penetrated a cavern at a depth of 1350 feet. The drill pipe dropped approximately three feet (witnessed by geologist near the rig) and one of the drill stems snapped leaving 920 feet of 2 7/8" drill pipe and a 20-foot drill collar stuck in the hole. They were unable to recover the fish. Due to unexpected geological conditions in the hole and no fault of the driller, the Company will reimburse the contractor for approximately 50 percent of the original value of the drill pipe.

The rigs have been moved to new locations in the following sections:

Rig #1 - moved to Hole No. 24-7115-1

Rig #2 - moved to Hole No. 24-7135-2

These new locations will be spudded in on August 16, 1976. The drill crews are presently on a four-day work break.

NEW MEXICO

East Church Rock State Leases

The drilling planned for 1976 in the Church Rock area has been completed. Gamma-ray logs from the drill holes showed no favorable radioactive anomalies.

The following holes were drilled in the area during the past week:

<u>Hole No.</u>	<u>T.D.</u>
161402-2	1900'
161416-1	1250'
161416-2	1200'
171436-1	2175'
161502-1	1410'

CVX 00609

WYOMING

Washakie Basin Project, Sweetwater County

Eight holes, for a total of 6800 feet, were drilled in the project area since last report date. The increase in drill footage during the past week is due to one rig working a double shift and more stable drill crews.

The following holes were drilled in the area during the past week:

<u>Hole No. &amp; Loc.</u>	<u>Depth</u>	<u>Remarks</u>
Sec. 36-T15N-R98W, #19	600'	No radioactivity
Sec. 36-T15N-R98W, #25	1000'	No radioactivity
Sec. 36-T15N-R98W, #27	1000'	Upper sand 3X BG Lower sand 2½X BG
Sec. 36-T15N-R98W, #29	600'	@480' top of sand 3X BG @502' base of sand 5X BG
Sec. 36-T15N-R98W, #30	600'	No radioactivity
Sec. 36-T15N-R98W, #34	600'	Top of sand 4X BG Base of sand 2X BG
Sec. 16-T13N-R97W, #1	1000'	Several spikes 2X BG
Sec. 16-T13N-R97W, #2	1000'	From 780-810' good sand 10 ft. anomaly 2½X BG

The 1976 drilling for the Washakie Basin is expected to be completed by September 1 if all goes well.

GENERAL

Messrs. R. P. Barnes, R. W. Gloyn and K. Rank have spent the past week in Saskatchewan, Canada visiting mines in the Cluff Lake, Rabbit Lake and the Beaver Lodge uranium district.

R.D. Gypert Jr.

RDC,JR:alr

cc: Mr. Glenn E. McKinley

APPROVED

Carl H. Smith

CVX 00610

WEEKLY PROGRESS REPORT  
JULY 30-AUGUST 5, 1976  
SALT LAKE CITY OFFICE

MINERALS EXPLORATION	
AUG 9'76	
R. P. BLANC	
S. MUEBBIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

URANIUM

COLORADO

Huerfano Basin Project, Custer County

No new drill holes have been completed since last report period. The drilling is very hard and the penetration rate is very low.

One rig's drill string twisted off at a depth of 95 feet from surface (hole depth 760 feet). They are presently fishing for the string of pipe with little encouragement that it will be recovered.

Great Divide Project

Mr. Robert Gloyn is presently doing surface mapping in the project area.

NEW MEXICO

Church Rock Area (State Leases)

One hole has been completed in Section 1, Twp. 16 North, Rge. 14 West, for a total depth of 2070 feet. No radioactive anomalies were indicated on the gamma-ray log. If all goes well, the drilling on these leases will be completed by the end of next week.

UTAH

General - Reported by K. Rank

About 200 samples were collected from the Marysvale, Utah, area this week. These samples will assist our Department in determining the extent and grade of uranium mineralization in the area sampled. A ground radiometric survey was also conducted.

The Marysvale area was brought to our recent attention by submittal.

CVX 00611

WYOMING

Washakie Basin Project

Three 1000-foot holes were completed during the past week. No radioactive anomalies were reported. The drill period was cut short due to heavy rains in the area.

URANIA EXPLORATION INC. (This item not reported to Skelly Oil Company)

Belt Series Joint Venture (Reported by K. Rank)

An informal meeting was held in Golden, Colorado, on August 2 to discuss the status of the Belt Series Joint Venture. The meeting was attended by representatives from each of the participating companies.

The main topics of discussion centered on 1) non-Beltian uraniferous metamorphics in the study area, and 2) an up-date on our priority target areas.

The essence of the meeting resulted in our agreement that because of man-power and time restrictions the non-Beltian metamorphic environments will take low priority and no new work will be undertaken in these environments.

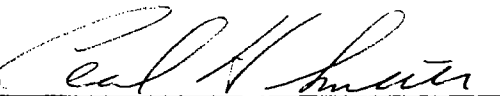
The four main target areas are continuing to receive much attention in the form of general prospecting and geochemical studies. Numerous geochemical techniques are presently being tested including: pine needle, pine cone, moss, A & B soil horizons and water sampling.

  
\_\_\_\_\_

RDC,JR:alr

cc: Mr. Glenn E. McKinley

APPROVED

  
\_\_\_\_\_

CVX 00612

WEEKLY PROGRESS REPORT  
JULY 23-29, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
AUG 2'76	
→ R. P. BLANC	RS
→ S. WICKS	RS
→ D. A. NICHOLS	RS
→ W. M. PENNELL	RS
C. ROVE	RS
T. WILLIAMS	RS
FILE	

COLORADO

Huerfano Basin Project

Hole No. 247126-1 was logged to a depth of 985 feet. Several anomalous spikes were present in the hole. The drilling rigs are presently on holes 247125-1 and 247125-2.

NEW MEXICO

La Ventana Project

The last hole, LV-16, should be completed this weekend. The rig will then be moved to the Church Rock area to drill our State sections.

UTAH

Salt Valley Prospect

Phillips has acquired the claims held by Jay Coates of Moab, Utah. We understand they plan to some drilling on them this year.

Marysvale Area

Mr. Ken Rank spent the week mapping a submittal in the Marysvale district of Utah.

WYOMING

Washakie Basin (Reported by R. W. Gloyn)

Coring on Section 36 is completed with the following results:

Core 76-2:	458-467	40% recovery	Weak limb mineralization TD 601'
Core 76-3:	460-474	95+% recovery	12.5' @ $\approx .13\%$ $eU_3O_8$ TD 601'

Work is currently progressing on logging the core and preparation of samples for analysis.

CVX 00613

Drilling of widespaced holes in Section 36 is continuing and should be completed within 8-10 drilling days. Upon completion of this drilling the rigs will begin the widespaced "stratigraphic" drilling on our scattered state sections. One hole was completed with two in progress during the week.

H-36-76-21	TD 1000'	Ragged 2.5X anomaly @ 500' in thin 3 sand - may represent seepage anomaly. Probably in lower stratigraphic horizon than previous mineralization.
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Saratoga Area

A listing of available electric logs, Amstrat lithologic log and Amstrat cuttings for oil wells in the area was compiled. This listing will be sent to Mr. Dan Gorski, our geological contractor on the project.

Great Divide Basin

Surface mapping in the area will begin on July 30, 1976.

CCI-Thunderbird (Reported by R. P. Barnes)

Checking of the 94 maps comprising the 1" = 100' intercept maps of the Thunderbird reserve areas is nearing completion. As the areas are completed copies of the maps will be forwarded to Colorado School of Mines Research Institute (CSMRI) for computation of statistical reserve estimates. Concurrently proven ore reserves are being computed by the Salt Lake staff using the block method. To date, CSMRI has received maps on the Mud Springs, Dry Willow and North Rolling Pin areas. Proven ore reserves have been computed for the North Rolling Pin area. When the statistical and computed reserves are completed they will be tabulated in a summary report.



RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00614

WEEKLY PROGRESS REPORT  
JULY 16-22, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
JUL 27 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

According to the Wall Street Journal, Newmont and Power Resources have formed a joint venture to explore for uranium on 300,000 acres of leases held by Power Resources in North and South Dakota. It is believed their leases lie on the west flank and south end of the Williston Basin and probably includes the area of our former prospects near Belfield, North Dakota.

COLORADO

Huerfano Basin

A second hole was completed this week on the Huerfano Basin prospect. Hole No. 227122-1 encountered the Cretaceous Pierre Shale at a depth of 520 feet. It had an anomalous spike adjacent to the Farista-Pierre contact. This hole was located approximately two miles northwest of the first hole.

We are presently making a land check of about eight sections south and west of the first hole. If these lands are open they will be claim staked.

During a trip to the field this week by Mr. Robert Barnes, it was learned that in addition to Cominco and Pioneer Nuclear, Exxon also had claims in this area.

NEW MEXICO

La Ventana, Sandoval County

Hole No. LV-15, Sec. 22, T1N-R19W, was drilled to 2350 feet and logged this week. In comparing the log with LV-8 it appears that the hole is about 80 feet short of the base of the Westwater so the hole will be deepened 100 feet following completion of LV-16. LV-15 was located so as to test a southwesterly trending channel system in the Jackpile. Significantly, it had an anomalous spike of 275 cps in the basal part of the Jackpile sandstone.

WYOMING

Washakie Basin, Sweetwater County (Reported by R. Gloyn)

Drilling:

The following rotary holes on Section 36 were completed during the week:

H-28	TD 1002	Barren but good sand section
H-26	TD 986	Barren but good sand section
H-24	TD 985	Barren but fair-good sand section

CVX 00615

Coring:

Core hole 76-1 was completed with core taken from 450-482.5 feet. This hole was designed to test the limb mineralization and the nature of the interlimb, altered sand. Recovery was excellent in the upper and lower portions but only fair in the center. However, it appears as if both mineralized limbs were recovered and also sufficient interlimb sand for alteration studies. Total depth of the hole was 602 feet with mineralization at 463' (1' @ Tr.) and 475' (1' @ .06).

Core hole 76-2 was rotary drilled to 380' where it encountered the old hole. It was subsequently moved and has rotary drilled to 220' Drilling will resume on Sunday, July 25 and the coring is expected to be completed by July 30.

Great Divide Project

Field work and surface mapping is scheduled to begin the middle of next week in order to better evaluate the stratigraphic and facies relationships of the exposed sands.

Saratoga Area

Mr. Dan <sup>G?</sup> Gorski has been evaluating the Saratoga area for the last three weeks. He was visited in the field and in subsequent office discussions several specific areas of further work were recommended. A preliminary land check is currently in progress and a preliminary geologic report has been received and is currently being typed. Results of both will be forwarded to Los Angeles as soon as they are available.

CCI-Thunderbird JV (Reported by R. P. Barnes)

Draft copies of the Statistical Reserve Estimates report being prepared by Colorado School of Mines Research Institute were received in Salt Lake this week. This report will be reviewed and comments submitted to CSMRI by the Salt Lake staff.

GENERAL (Reported by K. Rank)

Two submittals were visited this week by K Rank. One located near Mountain Home, Idaho, consisted of a narrow discontinuous quartz vein in quartz monzonite. The vein showed minor iron sulfides, weak radioactivity, and no recognized uranium minerals. The submittal was formally rejected.

The second submittal consisted of 107 unpatented claims immediately northeast of the Marysville uranium district. Considerable rock alteration exists scattered throughout the area. Locally good secondary uranium mineralization is present. Unlike the main productive Marysville uranium area, these claims cover veins and disseminations in volcanics rather than in plutonic rocks. The submittal requires additional consideration to assess its possible merits.

CVX 00616



ARIZONA

Breccia Pipe Project

Exactly one-half of the follow-up soil samples over our most favored anomalies have been returned from the laboratory. While our follow-up samples were taken on 200-foot centers, the first one-half analyzed represents sampling on 400-foot centers. The results seem to indicate that there are no high coincident copper, zinc, cobalt, nickel and/or silver anomalies. The remaining samples may not be worth the expense of analyzing.

*Robert P. Barnes/alr*

RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00617

WEEKLY PROGRESS REPORT  
JULY 9-15, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
JUL 19 1976	
R. P. BLANC	<input checked="" type="checkbox"/>
S. MUESSIG	<input checked="" type="checkbox"/>
D. A. NICHOLS	<input checked="" type="checkbox"/>
W. M. PENNELL	<input checked="" type="checkbox"/>
L. C. ROVE	<input checked="" type="checkbox"/>
J. T. WILLIAMS	<input checked="" type="checkbox"/>
FILE	<input type="checkbox"/>

COLORADO

Huerfano Basin Prospect

The first hole, 277135-1 encountered a 130-foot thick interval from 810 to 940 feet with count averaging 4X background (200 cps) (background = 50 cps) and peaks to 1000 cps. The count is in a sandy section above the contact with the Pierre Shale. The Huerfano and Cuchara formations, which underlie the Farista Conglomerate near Gardiner, Colorado, are absent in the prospect area. Steps are being taken to acquire additional claims in the vicinity. Both Pioneer Nuclear and Cominco also have claims in the Huerfano Basin.

Great Divide Prospect

Mr. Robert Gloyn spent some time examining outcrops and mapping the surface geology of this area so that a better interpretation can be made of the drill hole data.

NEW MEXICO

La Ventana Project

Hole LV-13 was drilled to a depth of 3270 feet, and hole LV-14 was drilled to a depth of 1700 feet. LV-14 was located about 3/4 miles north of LV-10 in Sec. 11-19N-1W. Although the logs of these holes have not been received in the Salt Lake office, both are reported to have good sections of Jackpile sandstone.

LV-15, the next hole, will be located in Sec. 22-19N-1W near the quarter corner on the east side of the section. The last hole, LV-16, will be located in a similar position in Sec. 32-19N-1W. These holes are located so as to test a thick sequence of Jackpile Sandstone that can be traced southwestward from the outcrop. Drilling at La Ventana should be finished in about one week.

East Church Rock

Mr. Robert Nakoaka, Albuquerque contract geologist, and Casey Danielson, summer student hire, visited the area to stake hole locations, check access and locate drilling water sources. Drilling should begin in one to two weeks.

CVX 00618

WYOMING

Washakie Basin Project

Below are the results of the drilling this week as reported by Robert Gloyn:

Section 36:	Hole No. 8	TD 600' - no count but very sandy.
	Hole No. 16	TD 600' - very low grade limbs at 499' and 512'.
	Hole No. 12	TD 600' - barren (beautiful 20-22' sand section)
	Hole No. 28	TD to 1,000' - currently being probed
	Hole No. 26	Just started drilling to about 300'

Planning to start drilling to core point on one of the holes today and will start coring on Saturday.

ARIZONA

Breccia Pipe Project (Reported by K. Rank)

About 450 follow-up soil samples were taken over several selected areas where anomalies have previously been detected. The samples taken on 200-foot centers will be analyzed for Cu, Zn, Co, Ni and Ag. These elements are both immobile in an alkaline environment and present in our model Orphan Lode deposit. Results of this phase will not be known for about one month. A recommendation on the merits of drilling specific targets will be made at that time.

++++

Energy Research and Development Administration recently released a report (GJO-111 (76)) outlining the results of an initial phase of the National Uranium Resource Evaluation (NURE) Program. The report estimates uranium ore reserves and potential resources available at costs of \$10, \$15, and \$30 per pound U<sub>3</sub>O<sub>8</sub>. Separate geographic regions, types of deposits, and host rocks are described. A tabulation showing what ERDA feels may represent resources in the "nonsandstone" category is presented here .

Distribution of \$30/lb. Potential "Nonsandstone"  
Uranium Resources in the U.S.

Regional Area, locality,  
type deposit, or rock type

	Tons U <sub>3</sub> O <sub>8</sub>					
	Probable	(%)	Possible	(%)	Speculative	(%)
1. <u>Rocky Mtns.</u>						
Precambrian Undivided	53,500	(45)	65,500	(20)	9,000	( 5)
2. <u>Arizona</u>						
Breccia Pipes	20,700	(17)	53,000	(16)	--	

CVX 00619

Regional Area, locality,  
type deposit, or rock type

	Tons U <sub>3</sub> O <sub>8</sub>					
	Probable	(%)	Possible	(%)	Speculative	(%)
3. <u>Basin and Range</u>						
Marysvale	1,800	( 2)	500	( 0)	--	
Mt. Belnap Rhyolite	27,100	(23)	--		--	
Beryllium tuff	5,500	( 5)	162,000	(49)	--	
"Siebert" tuff	2,500	( 2)	12,500	( 4)	--	
Dripping Spring Qtzite.	2,500	( 2)	6,500	( 2)	--	
Undivided granites	700	( 1)	6,000	( 2)	24,000	(13)
Undivided metamorphics	200	( 0)	1,000	( 0)	25,000	(13)
4. <u>Pacific Coast</u>						
Undivided metamorphics	500	( 0)	17,000	( 5)	35,000	(19)
5. <u>Appalachians</u>						
Undivided Crystallines	--		--		23,000	(13)
	115,000	(97)	324,000	(98)	116,000	(63)

"Nonsandstone" potential resources <sup>cc</sup> amount for about 11 percent of the total U. S. "Probable" resources, 26 percent of the "Possible" resources, and 31 percent of the "Speculative" resources.

*Bob Barnes*

RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00620

WEEKLY PROGRESS REPORT  
JULY 2-8, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
JUL 12 '76	
R. P. BLANC	<i>[Signature]</i>
S. MUESSIG	<i>[Signature]</i>
D. A. NICHOLS	<i>[Signature]</i>
W. M. PENNELL	<i>[Signature]</i>
L. C. ROVE	<i>[Signature]</i>
J. T. WILLIAMS	
FILE	

COLORADO

Huerfano Basin Project

Drilling commenced this week on the Huerfano prospect. At week's end, the first hole, No. 2471-35-1, was at 300 feet. A second rig is to be moved on location over the weekend.

NEW MEXICO

La Ventana Project, Sandoval County

Hole LV-13, located in Sec. 27, T19N-R1W, is drilling ahead at 2000 feet. This hole should be completed over the weekend.

WYOMING

Washakie Basin Project, Sweetwater County

Below are the revised coordinates of the holes in the SE $\frac{1}{4}$ , Sec. 36, T15N-R98W:

<u>Drill Hole</u>	<u>Elev.</u>	<u>FSL</u>	<u>FEL</u>	<u>T.D.</u>	<u>Remarks</u>
A-36-76-1	7027	1018	1249	600	N.C.
A-36-76-2	7025	1019	1490	600	N.C.
A-36-76-3	7021	1017	1690	600	N.C.
A-36-76-4	7017	1021	1925	600	N.C.
A-36-76-5	7039	815	1500	600	limbs
A-36-76-6	7019	822	1912	600	1 $\frac{1}{2}$ ' - 0.07 (peak)
A-36-76-7	7044	619	1285	600	limbs
A-36-76-8*	7047	618	875		
A-36-76-9	7051	415	1100	600	N.C.
A-36-76-10	7050	425	695	600	N.C.
A-36-76-11	7043	405	1590	600	N.C.
A-36-76-12*	7037	405	1870		
A-36-76-13	7055	5	1070	600	N.C.
A-36-76-14	7044	0	840	600	N.C.
A-36-76-15	7045	10	640	600	N.C.
A-36-76-16*	7050	0	1470		
A-36-76-17	7044	0	1680	600	1' - 0.04 (peak)
A-36-76-18	7044	0	1882	600	N.C.

The three additional holes listed above will be drilled in this area prior to any attempt to core the mineralized sand. We will also drill about 10 holes elsewhere in Sec. 36 to give better stratigraphic control in this area.

CVX 00621

KGS-UJV Shirley Basin (Reported by R. W. Gloyn)

Most of last week was spent on preparation of geologic reports and maps for patenting of Claims 11, 13, 15, Sec. 9 and Claims 11, 13 25, Sec. 10, Twp. 27 North, Rge. 78 West. In addition, two days were spent in the field with Morrison-Knudsen representatives discussing the lithology and the stratigraphy of units in Sec. 4 for a stope stability study.

ARIZONA

Breccia Pipe Project

Mr. Ken Rank is presently collecting additional samples for analysis on four selected areas. These areas had anomalous values of selected elements in the 500-foot grid samples. The field work is expected to take about a week.

*Robert P. Barnes*

RPB:alr

cc: Mr. Glenn E. McKinley

CVX 00622

WEEKLY PROGRESS REPORT  
JUNE 28, - JULY 2, 1973  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Huerfano Basin Project

The week was spent contacting land owners, locating drill hole sites, and securing water for drilling operations.

Drilling will commence July 6, 1976.

NEW MEXICO

Church Rock East

Mr. Bob Nakaoka, contract geologist, has prepared a drilling program for our state sections east of Pinedale, Nex Mexico. The program consists of seven holes and 11000 feet of drilling. Depths will range from about 1100 feet to 1700 feet. Drilling density will be about one hole per 1/2 section.

Church Rock Area

Pioneer Nuclear presently controls a large block of well-located land in the area where many recent discoveries have been made. Because of budget limitations, commitments, etc., they might entertain a joint venture proposal where drilling would earn an interest in their property; this is according to Bob Nakaoka. Mr. Nakaoka has a good relationship with Jerry Eshbaugh of Pioneer.

NEW MEXICO

La Ventana Project, Sandoval County

Mr. Robert Barnes spent three days in the field visiting outcrops and examining cuttings and logs from project drill holes with Mr. Casey Danielson, summer-hire geologist.

This week hole LV-12 was completed and logged to the total depth of 2400 feet. Although we continue to encounter thick sections of the Jackpile Sandstone in unconformable contact with the Dakota Formation no significant anomalous radio-activity has been encountered to date.

Hole LV-11 was drilled to a depth of 3100 feet. It contained a good section of Jackpile. This hole had not been completed when last week's report was prepared.

Next week the rig will commence drilling LV-13 approximately 1/2 mile southeast of LV-7 on Nuclear Corporation of New Mexico properties. This hole will be located in Sec. 27, T. 19 N., R. 1 W.

*M. ROVE*

*see also p. 3*

*what given*

MINERALS EXPLORATION	
HR 6 '76	
R. P. BLANC	<i>✓</i>
S. MUERSIS	<i>✓</i>
D. A. NICHOLS	<i>✓</i>
W. M. PENNELL	<i>✓</i>
L. C. ROVE	<i>✓</i>
J. Y. WILLIAMS	<i>✓</i>
FILE	<i>✓</i>

*MR ROVE -  
WHAT'S BEING  
DONE TO  
FOLLOW  
UP?*

*They are both people and short...  
Eshbaugh was unable to get mgmt. approv.  
to form-out last year... Prob  
tough to get  
approv this  
year.*

*?  
would  
they?*

CVX 00623

WYOMING

Washakie Basin Project, Sweetwater County

Following are the locations of the offset holes in Sec. 36, T. 15 N., R. 98 W.:

HOLE NO:	LOCATION:	ELEVATIONS:	TOTAL DEPTHS:
A-1	1260' FEL 1515' FSL	7027	600'
A-2	1495' FEL 1502' FSL	7025	600'
A-3	1698' FEL 1488' FSL	7021	600'
A-4	1928' FEL 1468' FSL	7017	600'
A-5	1469' FEL 1295' FSL	7039	600'
A-6	1900' FEL 1269' FSL	7019	600'
A-7	1255' FEL 1104' FSL	7044	600'
A-8	845' FEL 1145' FSL	7047	Not complete
A-13	Not Reported-----		600'
A-14	Will complete in following report		680'
A-15	Will complete in following report		600'
A-17	Will complete in following report		600'
A-18	Will complete in following report		Not complete

Hole A-17 had some kicks near the bottom at 580'. The log of this hole has not been received in Salt Lake, as yet.

URANIA EXPLORATION, INC. (Reported by Kenneth W. Rank)

Belt Series Joint Venture

Two Urania staff geologists, Ken Rank and J. Thomas Nash (U.S.G.S.), made a visit to the Midnight mine, Washington, this week. With Dr. Nash serving as the tour guide, he provided a description of the local geologic setting and suggested features that might be favorable for detecting future similar ore deposits. The trip was very useful and worthwhile.

Ken Rank also visited each of the four target prospect areas outlined by the Belt Series Joint Venture. In addition, an area north of Orient, Washington, was visited. There, a sequence of highly metamorphosed sediments contain strata-bound uranium mineralization in a biotite gneiss. Urania's geologists will spend some additional time working in this area. It looks very prospective.

We have staked 25 claims at Skookum Lakes, Washington. These claims adjoin land held by Diamond International; additional land is being negotiated for with the timber company. The claims cover a contact zone between Precambrian metasediments and a Mesozoic quartz monzonite.

ARIZONA (Reported by Kenneth W. Rank)

Breccia Pipe Project

A complete restudy of all the data in the Grand Canyon breccia pipe project has been made. Following-up on an idea suggested by Mr. L. Rove, we

CVX 00624



have concluded that some anomalies, possibly representative of concealed mineralized breccia pipes, exist in our test area. Three areas, the largest being about 2600 feet square, contain coincident radiometric "anomalies" (1.5 X background) and various plus 2 sigma anomalies in various elements such as Cu, Co, Ni, Zn, Pb, and Ag. These elements plus uranium are present in the model Orphan lode deposit. However, more work will likely be required to delineate specific drill sites within each of the three selected areas.

GENERAL

Mr. R. W. Gloyn spent this week working at the Shirley Basin mine in Wyoming.

A handwritten signature in cursive script, appearing to read "Glen Rank", is written over a horizontal line.

RPB:mdc

cc - Mr. Glenn McKinley

CVX 00625

WEEKLY PROGRESS REPORT  
JUNE 21-25, 1976  
SALT LAKE CITY OFFICE

URANIUM

MINERALS EXPLORATION	
JUN 28 '76	
R. P. BLANC	<i>[initials]</i>
S. MUESSIG	<i>[initials]</i>
D. A. NICHOLS	<i>[initials]</i>
W. M. PENNELL	<i>[initials]</i>
L. C. ROVE	<i>[initials]</i>
J. T. WILLIAMS	<i>[initials]</i>
FILE	

NEW MEXICO

La Ventana Project, Sandoval County

Hole No. LV-11 should reach its proposed total depth this weekend. Drilling had to be suspended for a period this week because of problems in reaching agreement with a surface lessor. Following completion LV-12, next week, we will drill two more holes on Nuclear Corporation of New Mexico property to confirm our interest in their land.

COLORADO

Dolores Anticline, Dolores County

The fifth hole was completed this week. Hole No. 401633-1 was drilled to 2,480 feet. This hole had a somewhat thinner Moss Back section than the holes lower on the flank of the anticline. The drill rigs are presently being moved to the Huerfano Project. An interim report summarizing the drilling results will be prepared shortly for the Dolores Anticline Project.

Great Divide Project, Moffat County

Eight holes have been completed on this project, to date. Drilling has now been suspended and the rigs moved to the Washakie Basin Project. Following is a summary of the holes, locations, elevations and total depths:

HOLE NO:	LOCATION:	TOTAL DEPTHS:	ELEVATIONS:
129317-1	900'FEL 1050'FSL	1045	6180
129318-1	4950'FEL 1800'FSL	1000	6215
129319-1	2250'FEL 3000'FNL	1480	6345
129320-1	2400'FEL 2700'FNL	1380	6290
129329-1	5160'FEL 2100'FNL	1200	6480
129424-1	2750'FEL 2800'FNL	1100	6245
129423-1	2300'FEL 3100'FNL	1000	6150
129422-1	2500'FEL 2800'FNL	940	6070

These holes were drilled in the vicinity of the surface occurrences of anomalous radioactivity. However, no anomalous radioactivity was detected in these holes. Drilling will resume following the completion of the work at Washakie Basin.

WYOMING

CCI-Thunderbird

Mr. Cecil Smith and Robert Barnes met with Ray Merry and Jim Link at the Colorado School of Mines Research Institute on June 18, to discuss the preparation of ore reserve estimates on the Thunderbird properties. It was decided that CSMRI

CVX 00626

would prepare statistical reserve estimates for each of the reserve areas. Each area would be covered by a separate chapter. The North Rolling Pin deposit would be prepared as a pilot and an example of the remaining reports. A cover report will summarize the results, their interpretation and the methodology used in their computation.

#### Washakie Basin

Four holes have been drilled on 200 feet centers in close proximity to the mineralized hole in Sec. 36, T.15N., R.98W., this week. These holes showed limbs of good count. The best hole showed about a mineralized interval of about two feet with a peak grade of 0.07% e  $U_3O_8$ . Drilling will continue here next week. We anticipate that these drill holes will give a better picture of the stratigraphy and the trend of the mineralization.

#### Nonsandstone Uranium - General (Reported by R. W. Gloyn)

Mr. Graham Miller, from Getty Oil Company's Australia office, was in Salt Lake City during the week. A number of very fruitful discussions with him on Jabiluka-type deposits, supported and refined some of our thoughts on exploration guides and environment of deposition of the host rocks.

#### Southern Appalachians (Reported by R. W. Gloyn)

A recently published article in Geology shows results of an areomagnetic and areoradioactivity survey of Alabama. Two large areas of higher count occur over areas of reported graphitic and aluminous metasedimentary rocks and one is associated with cataclastic rocks of the Towaliga and Goat Rock Fault zones. Exxon and Arco are reported to have been in the area for at least 3/4 of a year.

#### New England Appalachians (Reported by R. W. Gloyn)

A summary report from Mr. Ralph Barnard should be completed by the end of next week. A summary report on occurrences visited by me should be completed shortly after receipt of stream sediment assay results. These reports will be essentially summaries of the airborne anomalies visited rather than a comprehensive evaluation of the potential of the crystalline rocks of New England. Further work in the area is certainly warranted but "target" areas should be based primarily on geology with reported airborne anomalies used only as a supportive guide.

#### Great Lakes Area (Reported by R. W. Gloyn)

Literature research has begun on the uranium potential of the Precambrian of the Great Lakes region. Preliminary results suggest the area has potential for Jabiluka-type deposits; shallow water-miogeosynclinal metasedimentary rocks of Aphebian (2.3-1.8 b.y.) age unconformably resting on Archean amphibolitic-granulitic facies basement and unconformably overlain by shallow water continental-marine quartzites of 1.6-1.4 b.y. Metamorphism is generally low but "thermal" nodes up to garnet (continued on sheet No. 3)

and sillimanite grade exist in northern Wisconsin and Michigan and central Minnesota. In addition the area is thought to also have Blind-River-type potential.

URANIA EXPLORATION, INC. (Reported by Ken Rank)  
Belt Series Project

Our Belt Series joint venture project, now into their field season, was visited by K. Rank. This was our first field inspection by a staff geologist to view our geologic-geochemical anomalies. Other visits are planned this year that will correspond with significant new developments in the project.

Robert J. Buener

APPROVED: Paul H. Smith

RPB:mdc

cc - Mr. Glenn E. McKinley

CVX 00628

WEEKLY PROGRESS REPORT  
JUNE 14-18, 1976  
SALT LAKE CITY OFFICE

URANIUM

COLORADO

Dolores Anticline Project, Dolores County

Drilling is nearing completion on the fifth hole, 401633-1, because of mechanical problems, the completion of this hole was delayed. Hole 39162-1, logged over the past weekend, contained a good sand section. Much pyrite and carbonaceous material was noted in the cuttings.

Great Divide Project, Colorado-Wyoming

The following holes were completed this week:

<u>HOLE NO.</u>	<u>TD</u>	
129318-1	1000'	
129319-1	1460'	
129424-1		Drilling

Two more holes will be drilled here and then the rigs will be moved to Washakie Basin.

NEW MEXICO

La Ventana Project, Sandoval County

Holes numbers LV-9 and LV-10 were completed this week; total depths were 2400 and 1670 feet, respectively. These holes complete the assessment work required for this year on Nuclear Corporation claims. Two additional claims will be drilled on Getty's claims:

LV-11, located on the northeast 1/4 of section 21, T. 19 N., R. 1 W.  
LV-12, located on the northeast 1/4 of section 12, T. 18 N., R. 2 W.

The new holes will test an area where the Dakota formation overlies thick Jackpile sandstones.

WYOMING

CCI-Thunderbird

A meeting was held on Friday, June 18, with Colorado School of Mines Research Institute personnel to discuss the computation of ore reserves and the presentation of the results for the Thunderbird mineral reserve areas.

SCOUTING

Nevada

Wyoming Minerals Corporation hold 495 claims in T. 4 and 5 N., R. 32 E.,

MINERALS EXPLORATION	
JUN 21 '76	
R. P. BLANC	
S. MESSIG	
D. A. NICHOLS	
W. M. FENNEL	
E. C. ROVE	
T. WILLIAMS	
FILE	

CVX 00629

Black Mountain mining district, Mineral County, Nevada. Their large contiguous claim block plus scattered small optioned claim groups predominately overlie Jurassic biotite granite. Isolated secondary uranium mineralization, usually associated with minor limonite, occurs along shear zones, some even up to ten-feet wide in the granite. Surface mineralization is very weak. Shear zones may extend several hundred feet in length in the best situations. Their prospects look outstandingly poor.

Arizona

Mr. R. B. Smith, Manager of Exploration for Westinghouse, has indicated that their efforts in the Precambrian Dripping Spring Quartzite have met with limited success. Mineralization apparently is not economically disseminated very far away from the main fracture zones. He would like to see the project abandoned--so he says.

GENERAL

The uranium exploration program was reviewed with Mr. Don Carlos and Mr. Louis Rove, Los Angeles, in Salt Lake City, on June 14, 1976.

Robert P. Barnes  
Kenneth W. Rank

RPB,KWR:mdc

cc - Mr. Glenn E. McKinley

CVX 00630

WEEKLY PROGRESS REPORT  
JUNE 4-10, 1976  
SALT LAKE CITY OFFICE

URANIUM

LABORATORY EXAMINATION	
DATE	6/10/76
BY	W. T. BROWN
TEST	U-235
RESULT	0.000
REMARKS	W. T. BROWN

COLORADO

DOLORES ANTICLINE PROJECT, Dolores County

The following holes were completed this week:

<u>Hole No.</u>	<u>TD</u>
391614-1	2500
39162-1	2485

Hole 14-1 had a good section but no anomalous radioactivity. Hole 2-1 had not been logged when Mr. Hill reported Friday afternoon. The last hole, 401633-1 should be completed next week.

WELD COUNTY PROJECT, Weld County

Bob Raforth is sending copies of the logs of the holes drilled by Powerco together with the location surveys and hole location maps to the Salt Lake office.

GREAT DIVIDE PROJECT, Colorado-Wyoming

A third hole was completed prior to the drillers taking a break:

<u>Hole No.</u>	<u>TD</u>
129329-1	1190

Mr. Dave Tognoni reported to Salt Lake this week and then left for Baggs, Wyoming. He will assist Mr. Steve Kosanke, Contract Geologist, with the field operations on the Great Divide and Washakie Basin projects this summer.

NEW MEXICO

LA VENTANA PROJECT, Sandoval County

The second hole LV-8, Sec. 22-19N-1W, was completed this week at a total depth of 2720. The Morrison section was similar to that found in hole number LV-2. The drillers will take a break then move to LV-9 in Sec. 15-19N-1W. This hole should commence on June 11.

CVX 00631

WYOMING

WASHAKIE BASIN PROJECT, Sweetwater County

Drilling should commence in this area toward the end of the month. Arrangements have been completed for a core barrel to core the mineralized interval.

SARATOGA AREA

Dan Gorski, Contract Geologist, has been engaged to do a geologic study of the Brown's Park formation near Saratoga, Wyoming, to evaluate its potential for uranium ore deposits.

SCOUTING

UTAH

Anaconda reportedly is moving a rig back on their property near Seven Mile Canyon on the plunge of the Moab anticline. ESI Drilling Company, our contractor on the Dolores Anticline Project, drilled two 3800-foot holes in this area for Anaconda last year.


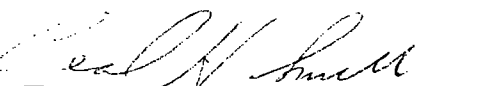
NEW ENGLAND APPALACHIANS

Approximately two weeks were spent, examining in the field airborne anomalies reported in the recently released ERDA-GJO-1666 report, by Ralph Barnard, a geological contractor and R. W. Gloyn. Approximately 35 of the reported 72 preferred anomalies were visited. Examination consisted of radiometric car traverses of the roads in the area, outcrop examination and local sampling and in several cases widespread stream sediment sampling. The original airborne data are nonspecific and nonselective with anomalies covering 5-10 square miles. In addition, it appears that the sophisticated statistical analysis has "produced" anomalies where no anomalies exist. For example, a  $3\sigma$  anomaly commonly represents less than  $1.5 \times$  background. In addition, facies variations within a formation or concentration of late stage pegmatites are not accounted for in the statistical analysis. In summary, two areas in Rhode Island show anomalously high background in the Esmond and Quincy granites and in one of these areas a strongly radioactive structure was encountered. In addition several areas in Vermont and western New Hampshire are favorable geologically with carbonaceous transition zone meta-sediments although no anomalous ground radiation was found. These areas have been stream sediment sampled. However, the great majority of anomalies visited are most likely exposure anomalies due to large exposures of the unit in cleared open areas or are due to pegmatite concentrations in metasedimentary or meta-volcanic units.

RPB:alr

cc: Mr. Glenn E. McKinley

APPROVED

CVX 00632



540005

CVX 00633

8239930730

Salt Lake City, Utah  
November 5, 1976

MINERALS EXPLORATION	
NOV 8 '76	
Q. P. BLANC	<i>[Signature]</i>
S. MAFESSON	<i>[Signature]</i>
D. A. NICHOLS	
W. M. PENNELL	<i>[Signature]</i>
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - OCTOBER, 1976

I. DRILLING SUMMARY

MONTHLY DRILLING  
OCTOBER, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Great Divide	11	13,221	11	0	0	
Colorado	Huerfano Basin	2	2,255	2	0	0	
Wyoming	CCI-Thunderbird	21	12,375	11	6	4	Sept. drilling
Total		34	27,851	24	6	4	

\* Mineralized Hole G.T. - .20% - Min. 4' of .05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI > .20% - Min. 2' of .10% eU<sub>3</sub>O<sub>8</sub> (open pit)

POI > .60% - Min. 6' of .10% eU<sub>3</sub>O<sub>8</sub> (underground)

1976 DRILLING TO DATE

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Colorado	Dolores	5	12,485	5	0	0	
Colorado	Great Divide	21	25,326	21	0	0	
Colorado	Huerfano Basin	11	11,573	11	0	0	
New Mexico	Church Rock	6	10,005	6	0	0	
New Mexico	La Ventana	10	26,395	10	0	0	
Utah	Salt Valley	2	2,140	2	0	0	
Wyoming	CCI-Excluded	44	31,720	11	14	19	
Wyoming	CCI-Thunderbird	205	113,190	100	35	70	
Wyoming	Washakie Basin	57	45,505	56	0	1	
Total		361	278,339	222	49	90	

CVX 00634

## II. OPERATIONS

### COLORADO

#### Great Divide Project

Drilling has progressed at a satisfactory rate (one rig) in the project area during the past month. A second rig (rig previously in Huerfano Basin) will begin drilling in the area on November 4.

As of this date, no significant uranium mineralization has been encountered in any of the drill holes. However, traces of radioactivity have been encountered near sand-shale contacts. Whether this is an indication of significant mineralization in the area is not known at present.

If good weather continues in the area, it is expected that the 1976 drilling for the project will be completed by the end of November.

#### Huerfano Basin Project, Custer County

Drilling during the summer and fall of 1976 on the Huerfano Basin prospect has encountered uranium mineralization in two areas on our present land block. The more interesting occurrence to date is in the northeast part of our present land block. The first hole, No. 247113-1, drilled here encountered a thick (173') anomalously radioactive interval from 798 feet to 971 feet including 1½ feet of 0.03% eU<sub>3</sub>O<sub>8</sub>. Hole No. 247113-2 drilled 1320 feet to the west of 13-1 encountered the best mineral to date--1/2 foot of 0.11% eU<sub>3</sub>O<sub>8</sub> at 866 feet. However, the hole was not as anomalously radioactive as No. 13-1. Hole No. 13-3 drilled 1320 feet east of No. 13-1 contained a 4½-foot thick interval of 0.01% eU<sub>3</sub>O<sub>8</sub> at 794 feet.

Study of the logs and cuttings suggests that holes 13-2, 13-1 and 13-3 were drilled, respectively, within the margin of and in the edge of a major sandstone channel below the Farista Conglomerate. Additional drilling to be done next summer will be directed to determining the areal extent of this channel and significance of the uranium mineralization it contains.

### WYOMING

#### Saratoga Project, Carbon County

Approximately 320 claims have been staked in the northern target area and the validation work is currently being done. A land check of the southern target area has been completed and a total of 10,575 acres of both fee and Federal land has been recommended for acquisition. Staking of the Federal land in this southern area has begun. If weather remains good, it may be possible to drill several exploration holes in the area immediately on completion of Great Divide drilling. Please refer to the enclosed map (Fig. 1) for a general outline of the prospect area.

### NON SANDSTONE

#### Urania Exploration, Inc.

A meeting of the Joint Venture partners was held at Golden, Colorado, on October 12, 1976. The purpose of the meeting was: 1) to discuss the budget

CVX 00635

and work plans for the remainder of 1976; 2) to gain some insight on Urania's 1977 work plans, and 3) to review Mokta's management reorganization within Urania.

Uranis will be collecting, compiling and evaluating all previous data acquired during the past three years. Total expenditures for the next three months will be around \$90 M. Field work during this period will be minor.

Mokta has announced some organization changes within Urania. This includes: a new replacement for Marcel Tabouret; he will be replaced by Jean-Claude Chauveau who is now the Executive Vice President of Urania; Tony Durand as Exploration Manager, and Regis Cambou has been named as the Crystalline Rockies Venture Manager. John Rostoll may become a separate Project Manager on certain future projects. C. S. "Nick" Ferris will no longer be responsible for the Joint Venture, but will remain in the organization.

The nonoperating partners expressed their concern for the future of the Crystalline Rockies venture, but also showed a measure of optimism with respect to our Belt Series project. The Belt Series project has been able to define several promising prospects. Some of these will be drilled this year.

### III. GENERAL

Mr. R. P. Barnes attended a joint venture meeting in Casper, Wyoming, on October 12 with The Cleveland-Cliffs Iron Company--joint venture operator.

Messrs. C. H. Smith and R. D. Cypert, Jr. attended ERDA's Uranium Industry Seminar held in Grand Junction, Colorado, on October 19-20, 1976. The meeting was well organized and several interesting papers concerning the uranium industry were presented. Approximately 550 industry representatives were present compared to 400 attending last year's session.

### IV. FIELD AND MINES VISITATION TRIP

Messrs. J. Macdonald, J. Delane, George Riley and Ridge Comeau from Getty Mines, Limited, Canada, and R. Gloyn, Ken Rank and R. Cypert, Jr. from the Salt Lake office, visited the following mining properties during the past week;

Monday, Oct. 25, Shirley Basin, Carbon County, Wyoming  
Getty-Skelly-UJV Operations

Monday morning was spent visiting the stripping operations and our new shop and office facilities

Utah International - Monday afternoon was spent visiting their open pit operations. It was learned that their lower mining grade cutoff is .02% U<sub>3</sub>O<sub>8</sub> where it used to be .05%. The .01 material, when it can be identified, is stockpiled as lean ore and will be milled at some later date. The Uranium Department presently known as Utah International will be designated as Lucky Mac Mining after the GE-Utah merger has been completed. All of their ore zones are being developed with scrapers and mining is done with backhoes.

CVX 00636

Tuesday, Oct. 26, Powder River Basin, Converse County, Wyoming  
Exxon Corporation, Hyland Open Pit Uranium Mine

Exxon's open pit mine was toured on Tuesday. Their mining operations are similar to Utah's; that is, they are mining with backhoes and developing ore with small, single-engine cat scrapers. Their mine cutoff grade is .05%  $U_3O_8$ . All material below .05% down to and including .01%  $U_3O_8$  is being stockpiled and will be milled in the future. Since inception of mining, their average mine grade (open pit) has been .171%. The present average grade for the underground material is .15%. They are presently running 3,000 tons per day through the mill. They have a good, clean, well-organized mining operation. Since going to the lower cutoff grades, more emphasis is being placed on technical equipment to be used and tighter grade control.

Wednesday, Oct. 27. The morning was spent with Century Geophysical Company officials discussing and observing their new logging trucks and techniques. The afternoon was spent traveling from Casper to Gallup, New Mexico.

Thursday, Oct. 28, Kerr McGee's Church Rock Mine, McKinley County, New Mexico.

Kerr-McGee's Church Rock underground mine was visited on Thursday and the following information was obtained:

1. Mine shaft depth 1851 feet
2. Shaft sinking and mining costs not obtainable. Evidently their mining costs are embarrassing at this stage of their operations.
3. Ore reserves as of 1977 mining, estimated to be 11 MM lbs.  $U_3O_8$  but they are still developing in the nearby areas.
4. Cost to sink a 60" ventilation shaft is \$1.6 MM (approximately \$900.00 a foot).
5. The ore is being shipped to their Ambrosia Lake Mill.
6. Average mine grade they would not discuss but it appears, by visual inspection, to be between .15% and .20%  $U_3O_8$ .
7. They plan on sinking at least three additional mining shafts in the area.
8. At present, they are pumping 3,000 gallons of water per minute from the mine and they expect this to increase to five or six thousand gallons per minute.
9. Mining conditions are not good.
10. The mine is located on Navajo land and they are forced to use Navajo labor in a large part of their operations.

CVX 00637

11. The ore is produced from the Westwater Canyon member of the Morrison formation (Jurassic).
12. They are presently spending \$2 MM a year on exploration drilling in the area.
13. Their ore sales are based on an old contract with no escalating clause for price increases. (The selling price is probably between \$8.00 and \$12.00 per pound).
14. The ore extending to the north from their present mining operations is spotty and the continuity of the ore loads is very poor.

Messrs. R. Gloyn, K. Rank and R. Cypert visited Pioneer Nuclear's office on Friday, Oct. 29 to review the Ignacio Chavez Joint Venture. Recommendations concerning the 1977 program will be submitted after reviewing their 1976 drilling results. Drilling in 1976 will not be completed until the end of December.

V. SCOUTING  
New Mexico

Following is a tabulation of active drilling rigs exploring and developing uranium properties in the Grants Mineral Belt during October. (The information was obtained from a New Mexico Newsletter.

<u>Company</u>	<u>Exploration</u>	<u>Delineation and Development</u>
Atlantic Richfield	1	--
Bokum	1	--
Conoco	2	5
Exxon	3	3
Gulf	2	2
Homestake	1	--
Hydro-Nuclear	2	--
Keradamex	1	--
Kerr-McGee	2	5
Mobil	7	--
Phillips	2	6
Pioneer Nuclear	7	--
Ranchers	2	--
Teton	3	4
Union Carbide	2	--
United Nuclear	--	4
Totals	38	29

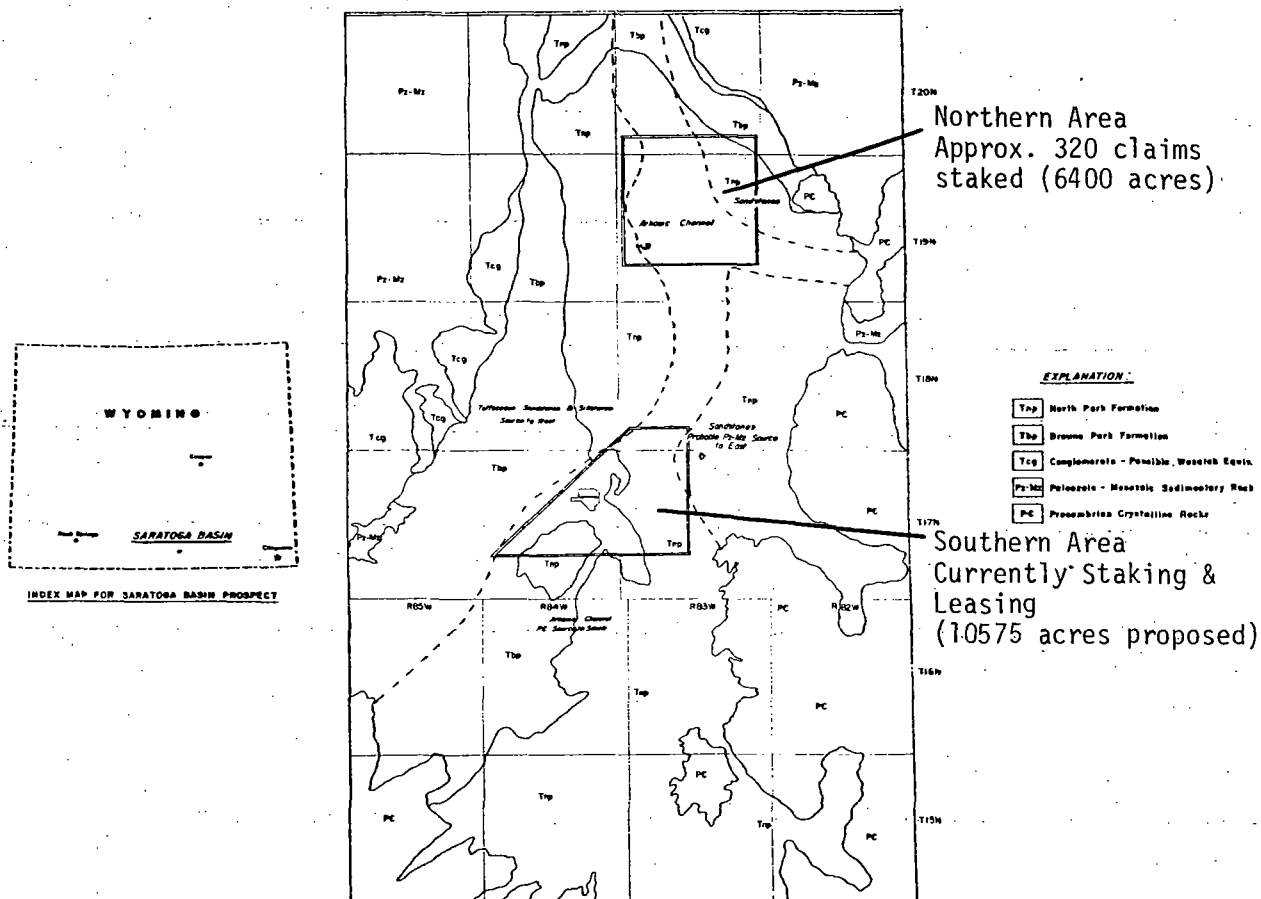
*R.D. Cypert*

RDC,JR:alr  
Attachment

cc: Messrs. Don F. Carlos w/attach.  
Glenn E. McKinley w/attach.

CVX 00638

# WYOMING URANIUM



## SARATOGA BASIN PROSPECT

CARBON COUNTY, WYOMING

Fig. 1

CVX 00639

Salt Lake City, Utah  
October 8, 1976

MINERALS EXPLORATION	
OCT 13 '76	
R. P. BLANC	
<del>R. MUESSIG</del>	<del>/</del>
D. A. NICHOLS	
W. M. PENNELL	<del>/</del>
L. C. ROVE	<del>/</del>
J. T. WILLIAMS	<del>/</del>
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - SEPTEMBER, 1976

I. DRILLING SUMMARY

MONTHLY DRILLING SEPTEMBER, 1976							
State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Huerfano Basin	2	2,160	2	0	0	Note: Hole 247113-1 contained 10.5' of .03% eU <sub>3</sub> O <sub>8</sub> from a depth of 960.5-971'
Colorado	Great Divide	2	2,960	2	0	0	
Wyoming	CCI-Excluded	9	7,095	5	3	1	Aug. drilling
Wyoming	CCI-Thunderbird	60	32,135	32	14	14	Aug. drilling (Sept. drilling to be reported in Oct. rpt.)
Wyoming	Washakie Basin	9	9,245	9	0	0	
Total		82	53,595	50	17	15	

\* Mineralized Hole G.T. = .20% - Min. 4' of .05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI > .20% - Min. 2' of .10% eU<sub>3</sub>O<sub>8</sub> (open pit)

POI > .60% - Min. 6' of .10% eU<sub>3</sub>O<sub>8</sub> (underground)

Due to the rapid changes in the price of yellow cake, the above grade cutoffs are subject to change or may be overdue for re-evaluation.

CVX 00640



1976 DRILLING TO DATE

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Colorado	Dolores	5	12,485	5	0	0	
Colorado	Great Divide	10	12,105	10	0	0	
Colorado	Huerfano Basin	9	9,318	9	0	0	
New Mexico	Church Rock	6	10,005	6	0	0	
New Mexico	La Ventana	10	26,395	10	0	0	
Utah	Salt Valley	2	2,140	2	0	0	
Wyoming	CCI-Excluded	44	31,720	11	14	19	
Wyoming	CCI-Thunderbird	184	100,815	89	29	66	
Wyoming	Washakie Basin	57	45,505	56	0	1	
Total		327	250,488	198	43	86	

II. OPERATIONS

COLORADO

Huerfano Basin Project

Drilling in the project area has been slow due to tough drilling, break-downs and inclement weather conditions.

Hole No. 247113-1 was completed on September 27, 1976. The hole was drilled to a depth of 980 feet encountering the Pierre Shale at 971 feet. This hole has an anomalously radioactive interval that extends from 798 feet to 971 feet. The hole averages 0.01% eU<sub>3</sub>O<sub>8</sub> from 798-860 feet (62') with a one-foot peak of 0.07% eU<sub>3</sub>O<sub>8</sub> at 810 feet. From 960.5 to 971 feet the hole averages 0.03% eU<sub>3</sub>O<sub>8</sub>.

This hole is located about one mile from the closest property line and about two miles from the nearest adjacent drill hole. The next hole will be located about one-quarter mile due west. Drilling should commence on that hole Oct. 1.

The anomalous zone is by no means an ore discovery at the present time, but it is of significant interest and the area warrants further drilling. At present a land check is being made to the north of our present holdings (see attached property map for location of anomalous drill holes and the area being checked). If the property is available, then additional land will be acquired in the area.

At present, this area is being drilled on a hole-to-hole basis because of the high altitude (+9000'). It is expected that no more than three additional holes will be drilled in the area this year. (See enclosed map #1 for drill hole locations and our land position).

Great Divide Project

Drilling in the project area has been slowed down due to breakdowns and availability of parts. One of the two rigs drilling in the area has been temporarily moved to the Huerfano Project. It will be moved back to the Great Divide Project by November 1. Approximately 50,000 feet remains to be drilled in the area.

CVX 00641

If bad weather does not wipe us out, the planned drilling for 1976 will be completed.

Lithologically, good, thick, sands with minute traces of mineralization have been encountered in some of the holes drilled in the area. The geological plumbing appears favorable for uranium deposits in the area. Whether this plumbing has been connected to mineralized ground water solutions in the area is unknown at present (see enclosed map #2 for drill hole locations and our land position.)

#### Dolores Anticline Project

Five holes were drilled in the project area during 1976. No favorable radioactive anomalies were encountered in any of the drill holes. All of the drilling has been completed for the 1975-76 assessment period. (See enclosed map #3 for our land position and 1976 drill hole locations)

#### NEW MEXICO

##### La Ventana Project

All of the 1976 drilling has been completed in the project area and all assessment obligations have been fulfilled. No favorable radioactive anomalies were encountered in the drill holes (see enclosed map #4 for drill hole locations and our land position).

##### Church Rock Project

Six holes were drilled in the project area (state leases) during 1976. No favorable mineralization was encountered in the drill holes. No additional drilling is planned for the project this year (1976). (See map #5 for our land position)

#### UTAH

##### Salt Valley Anticline

Two holes were drilled in the project area during 1976 with no additional drilling proposed for the remainder of the year. No favorable radioactive anomalies were encountered on Company leases. Another company encountered low-grade mineralization in an adjacent section. (See enclosed map #6 for drill hole locations and our land position)

#### WYOMING

##### Washakie Basin Project

The 1976 drilling program for the Washakie Basin Project has been completed. Seven holes drilled in the original discovery area (Sec. 36-15N-98W) had low grade mineralization; one hole encountered mineralization of ore grade and thickness. Core from the hole was taken and we are awaiting the results of the chemical analysis to aid in determining the disequilibrium status of the mineralization.

Wide spaced holes drilled on some of the other state leases in the area encountered some good potential uranium host sands that contained traces of uranium mineralization. Present recommendations are for additional drilling to be done in the area during 1977. (See enclosed map #7 for drill hole locations and our land position)

### III. OUTSIDE OPERATED JOINT VENTURES

#### NEW MEXICO

##### Ignacio Chavez-Mt. Taylor Claim Group

Pioneer Nuclear, the JV operator, is presently drilling in the project area. Expenditures were submitted in the 1977A-Program Expense Plan for drilling to be done next year. After this year's drilling has been evaluated, recommendations may be submitted to withdraw from this joint venture. This, of course, depends on what is encountered in holes drilled this year (see enclosed map #5 for our land position).

#### WYOMING -(Cleveland-Cliffs, Operator)

##### North Butte Project

A joint venture has been formed with Commonwealth-Edison for them to operate a development drilling program including underground testing on the property included in this area. Commonwealth-Edison will put up 90% of the money with Getty Oil and Skelly Oil putting in 5% and Cleveland-Cliffs Iron the remaining 5%.

##### CCI-Thunderbird

The Salt Lake City office has prepared new drill hole location and ore intercept maps for the property included in the joint venture.

A report on the proven ore reserves in the 13 mineralized areas has been completed and will be forwarded to Los Angeles for evaluation and distribution.

##### CCI-Excluded

Limited evaluation and development drilling in the project area has been done in the project area during 1976. Through August, 44 holes have been drilled for a total of 31,720 feet during the current year. One is referred to in the drilling summary sheet for the results of this year's drilling (see map #8 for location of our present land position for CCI Operated Projects).

Crystalline Rockies-Belt Series (Urania Expl. Inc., Operator)

Recommendations concerning whether we will continue in the joint venture will be submitted after this year's work has been completely evaluated. (See map #9 for general location of areas of work and interest)

IV. NEW PROSPECTS

Enning Prospect, South Dakota

Land acquisition is currently underway in the Enning area, Meade County, South Dakota. The geologic basis for this acquisition is the recognition of Shirley Basin type alteration associated with minor mineralization from previous drilling. Drilling to test the actual front (not intersected in 1972 drilling) is scheduled to begin in early spring 1977 (see enclosed map #10 for acquisition area).

Saratoga Prospect, Wyoming

Land acquisition (staking and fee leasing) is currently underway in the northern target area and a land check is being conducted on the southern target area. The geologic basis is the recognition of favorable arkosic channel sands in the subsurface in association with potential uranium source rocks (granites and/or White River Fm.) and anomalous radioactivity and possibly alteration updip from the target areas. Geologic details are found in reports by Gorski and a memo by Gloyn. Initial drilling on the northern target hopefully will begin in 1976 with further drilling on both it and the southern target scheduled for late spring 1977 (see enclosed map #11 for land acquisition area).

V. SCOUTING

New Mexico

Eighteen companies were operating 38 exploration and 32 development drill rigs in the Grants, New Mexico uranium district during September.

Texas

Thirteen companies were operating 17 exploration and 22 development rigs in the South Texas uranium district during September.

*R.D. Gypert*

RDC,JR:alr  
Attachments

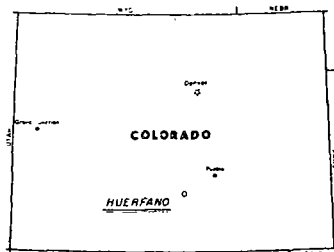
cc: Messrs. Don F. Carlos w/attachments  
Glenn E. McKinley w/attachments

CVX 00644

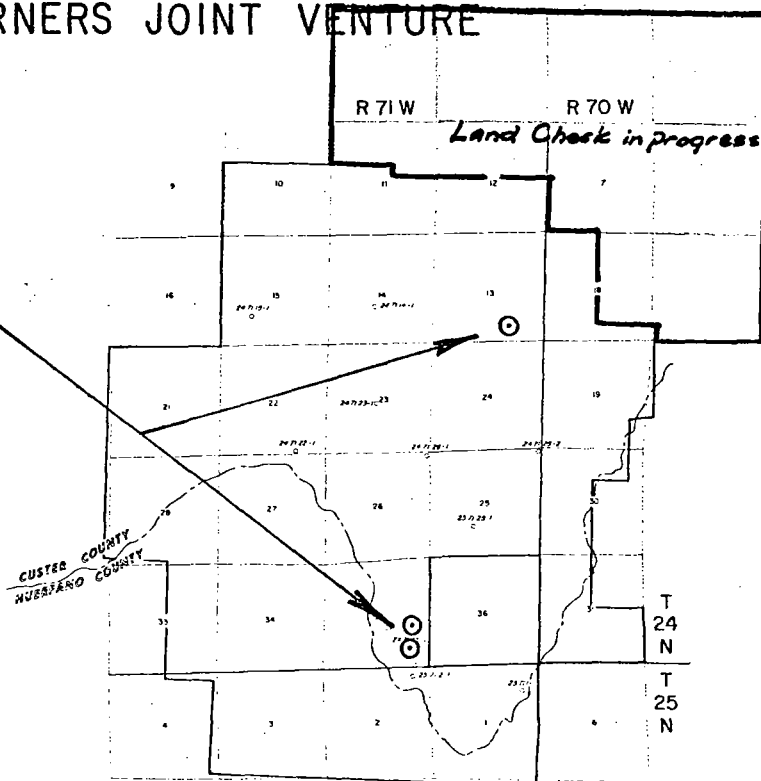
# COLORADO URANIUM

FOUR CORNERS JOINT VENTURE

*Mineralized Holes*



INDEX MAP FOR HUEFANO PROSPECT



## HUEFANO BASIN PROSPECT

CUSTER COUNTY, COLORADO

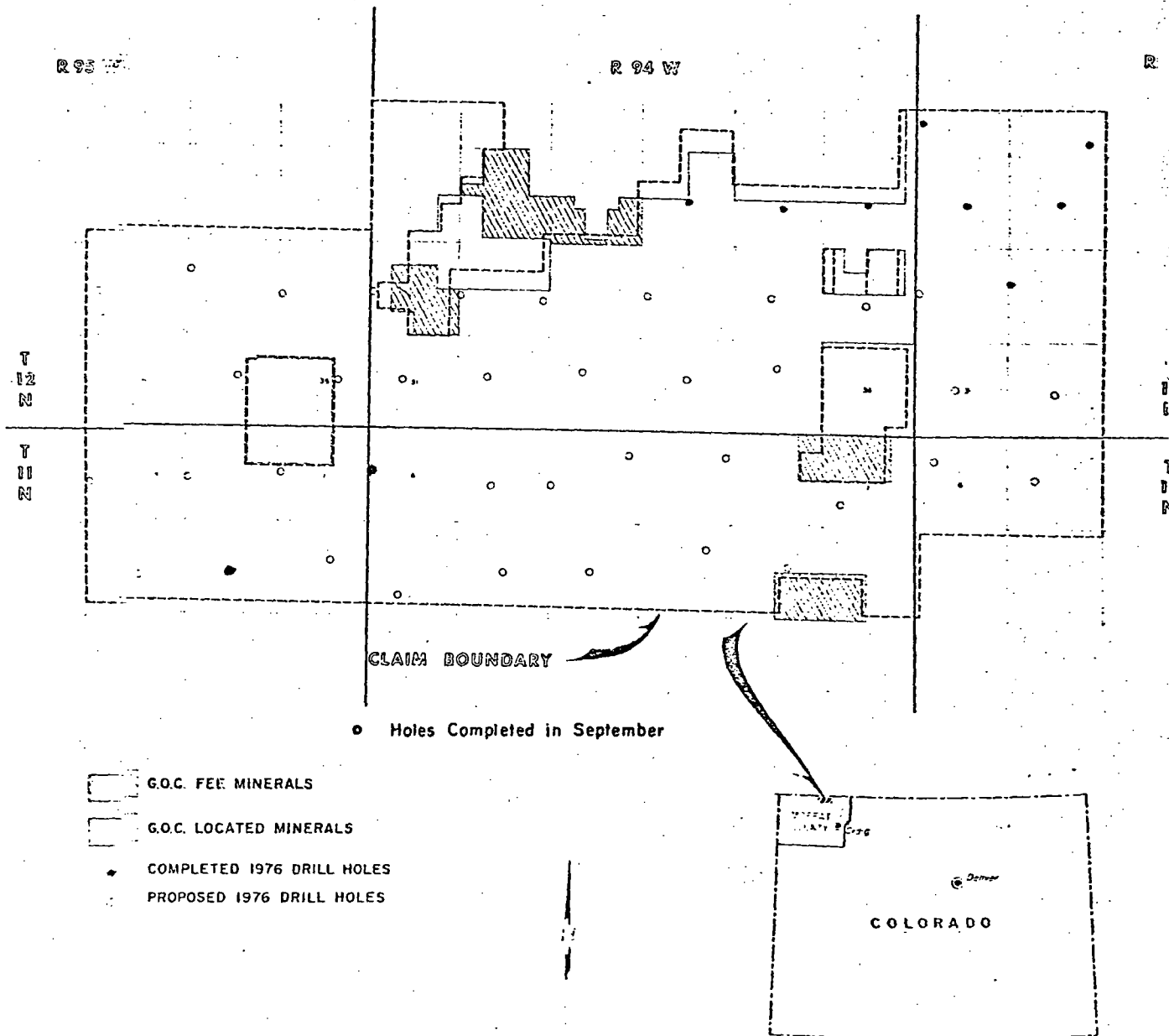
13,887 NET ACRES

MAP # 1

CVX 00645

# COLORADO URANIUM GREAT DIVIDE PROJECT

19,455 NET ACRES

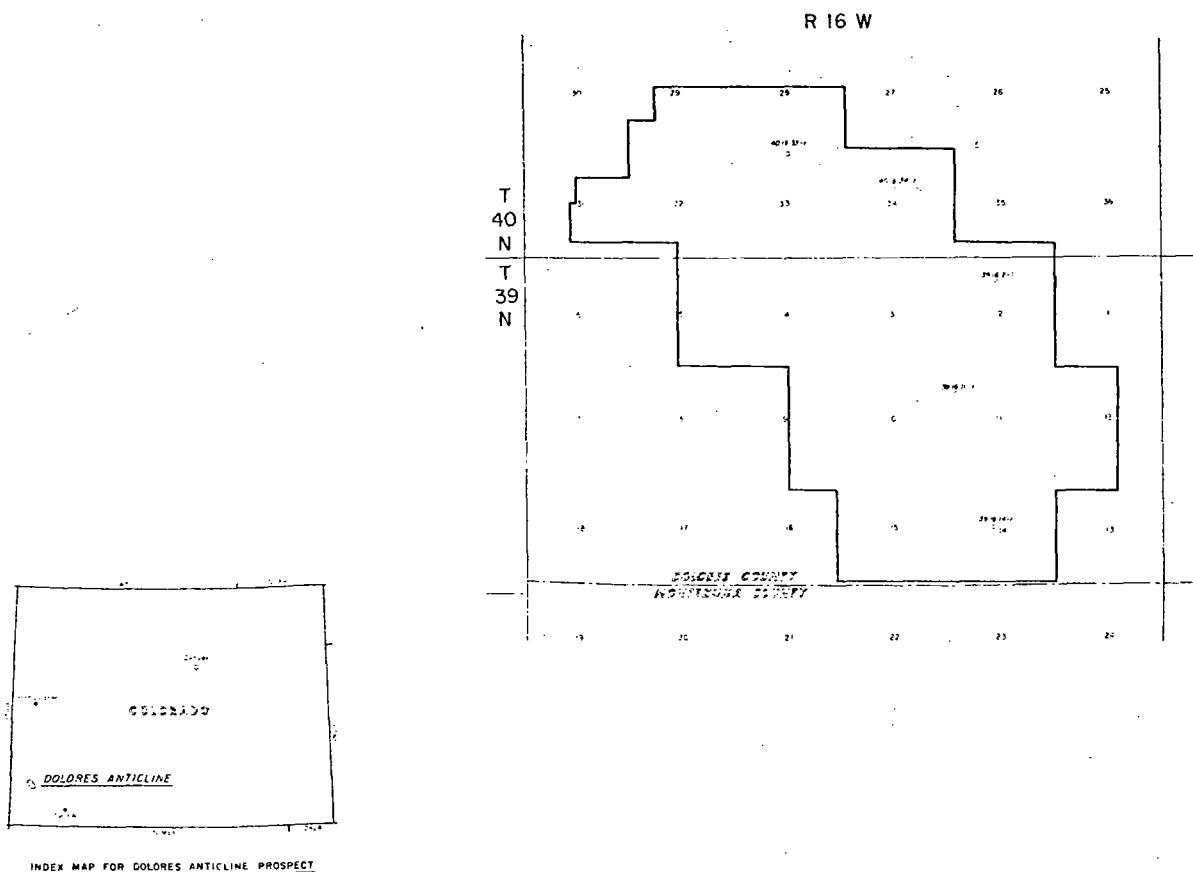


MAP #2

CVX 00646

# COLORADO URANIUM

FOUR CORNERS JOINT VENTURE



## DOLORES ANTICLINE PROSPECT

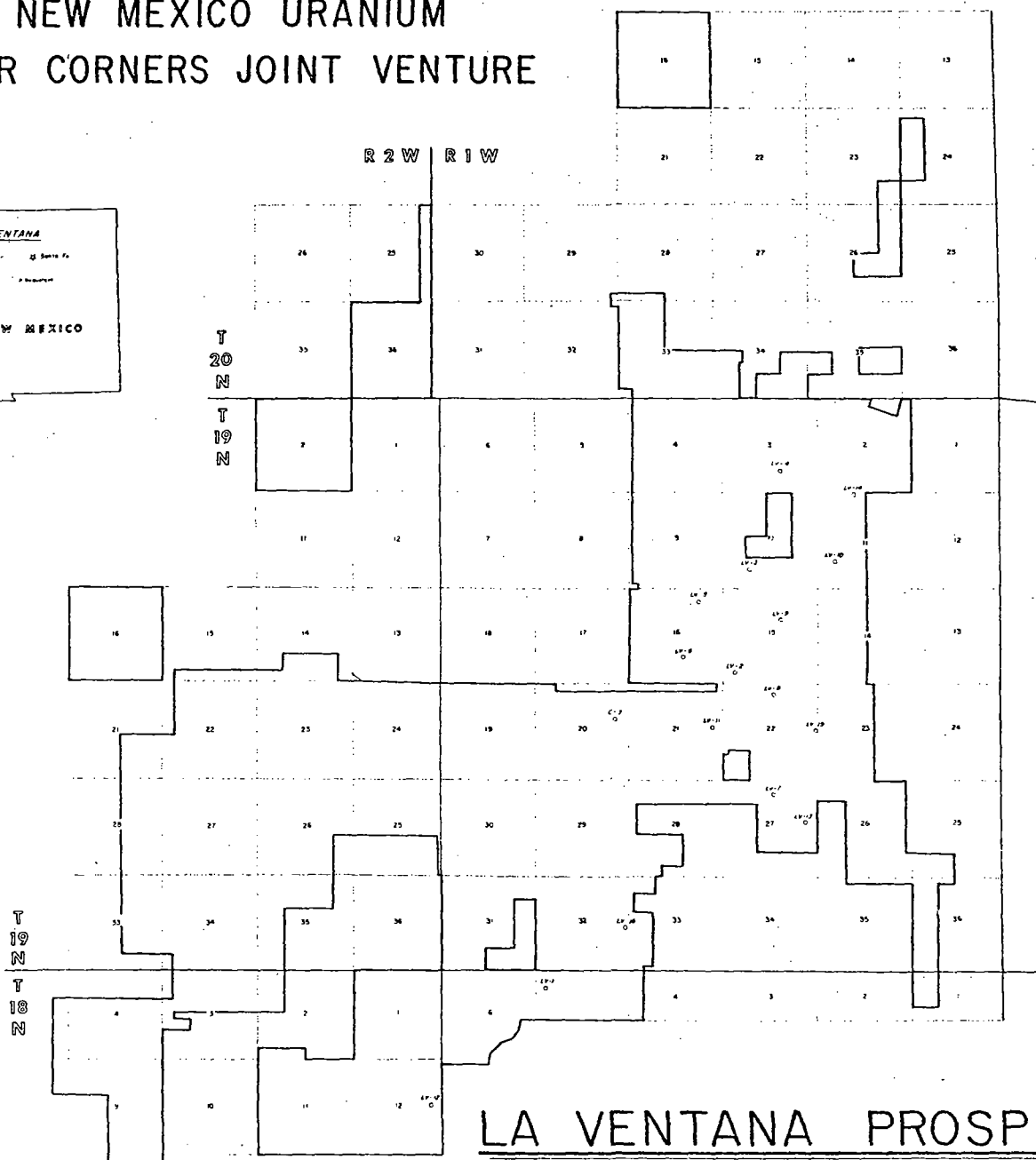
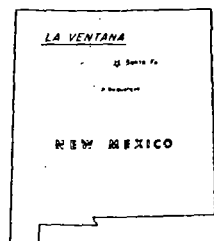
DOLORES COUNTY, COLORADO

8180 NET ACRES

MAP #3

CVX 00647

# NEW MEXICO URANIUM FOUR CORNERS JOINT VENTURE



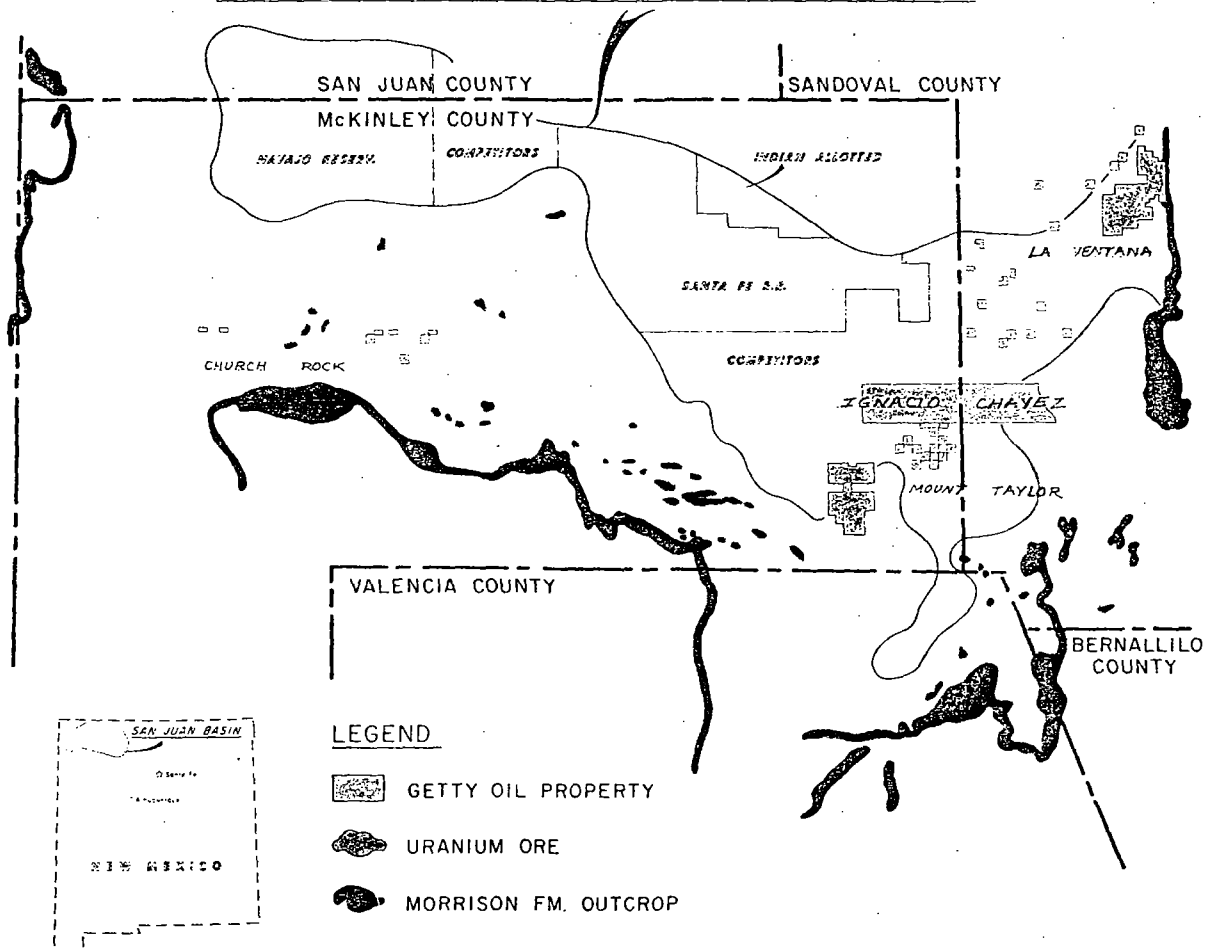
MAP #4

CVX 00648



# NEW MEXICO URANIUM

UNTESTED PROSPECTIVE AREA - DRILL DEPTHS 3000'-5000'



INDEX MAP FOR SAN JUAN BASIN PROSPECT

SEPT 1976

## SAN JUAN PROSPECT

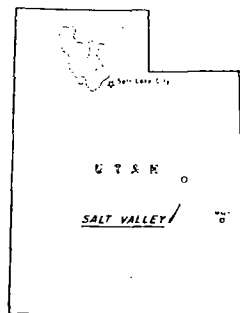
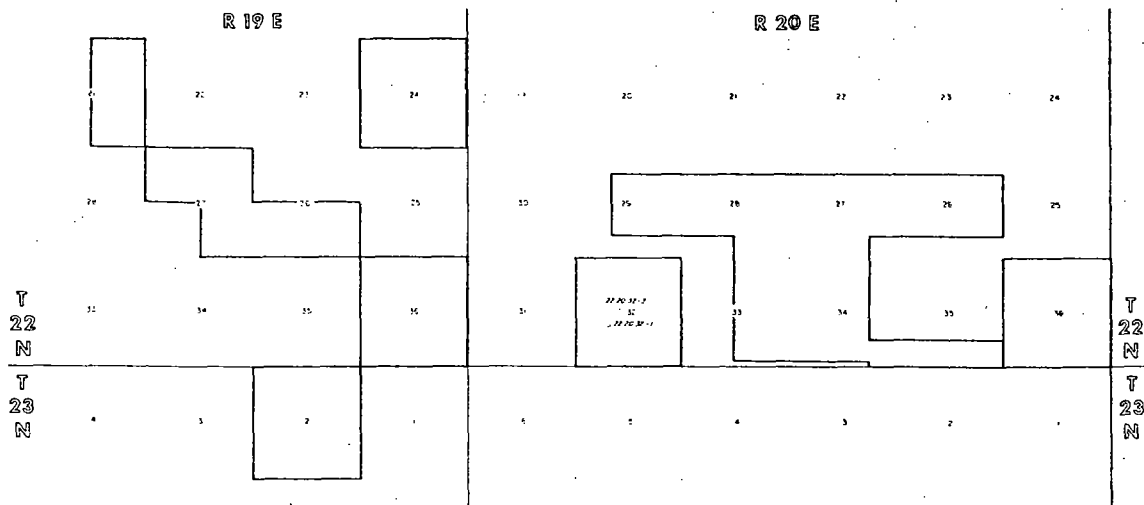
SAN JUAN, SANDOVAL, AND MCKINLEY COUNTIES  
NEW MEXICO

MAP #5

CVX 00649

# UTAH URANIUM

## FOUR CORNERS JOINT VENTURE



INDEX MAP FOR SALT VALLEY ANTICLINE

# SALT VALLEY ANTICLINE PROSPECT

GRAND COUNTY, UTAH

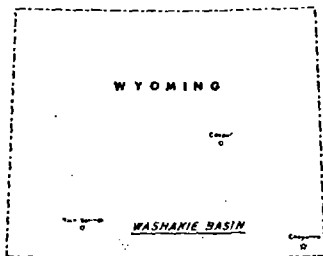
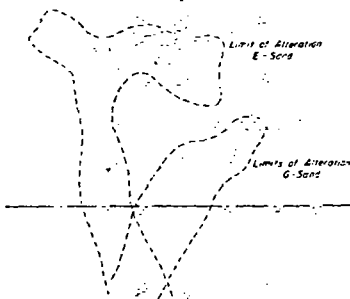
4345 NET ACRES

MAP #6

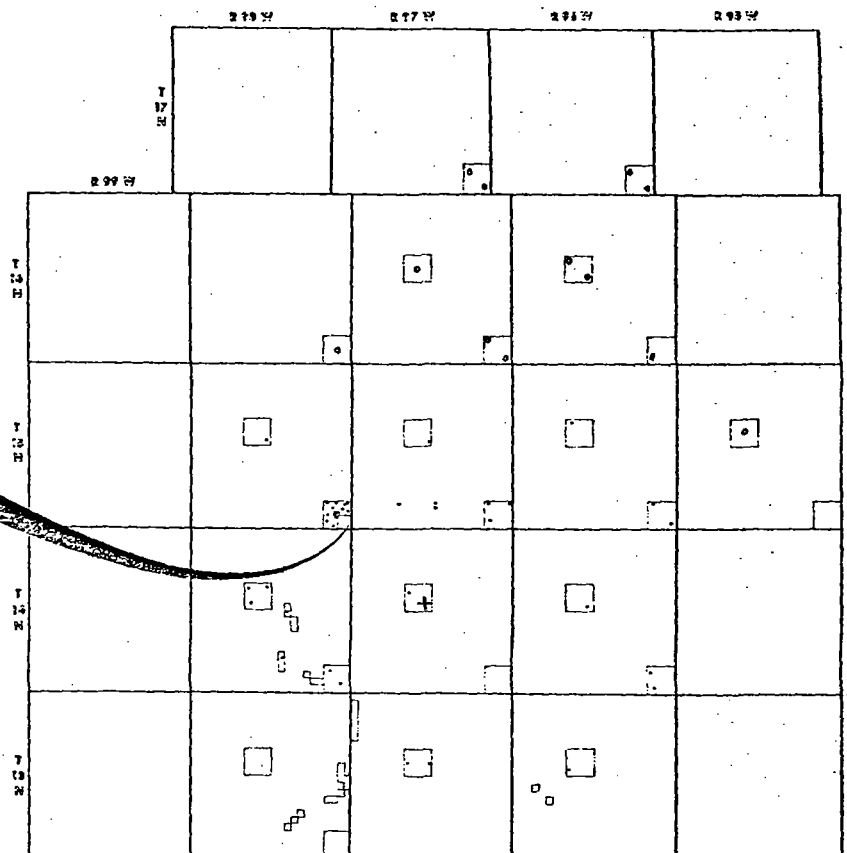
CVX 00650

# WYOMING URANIUM

SS. 1/4 OF SEC. 35, T13N, R99W.



INDEX MAP FOR WASHAKIE BASIN PROSPECT



• Holes Completed in September

## LEGEND

- Drill Holes
- Proposed Drill Holes
- Mineralized Area

## WASHAKIE BASIN PROSPECT

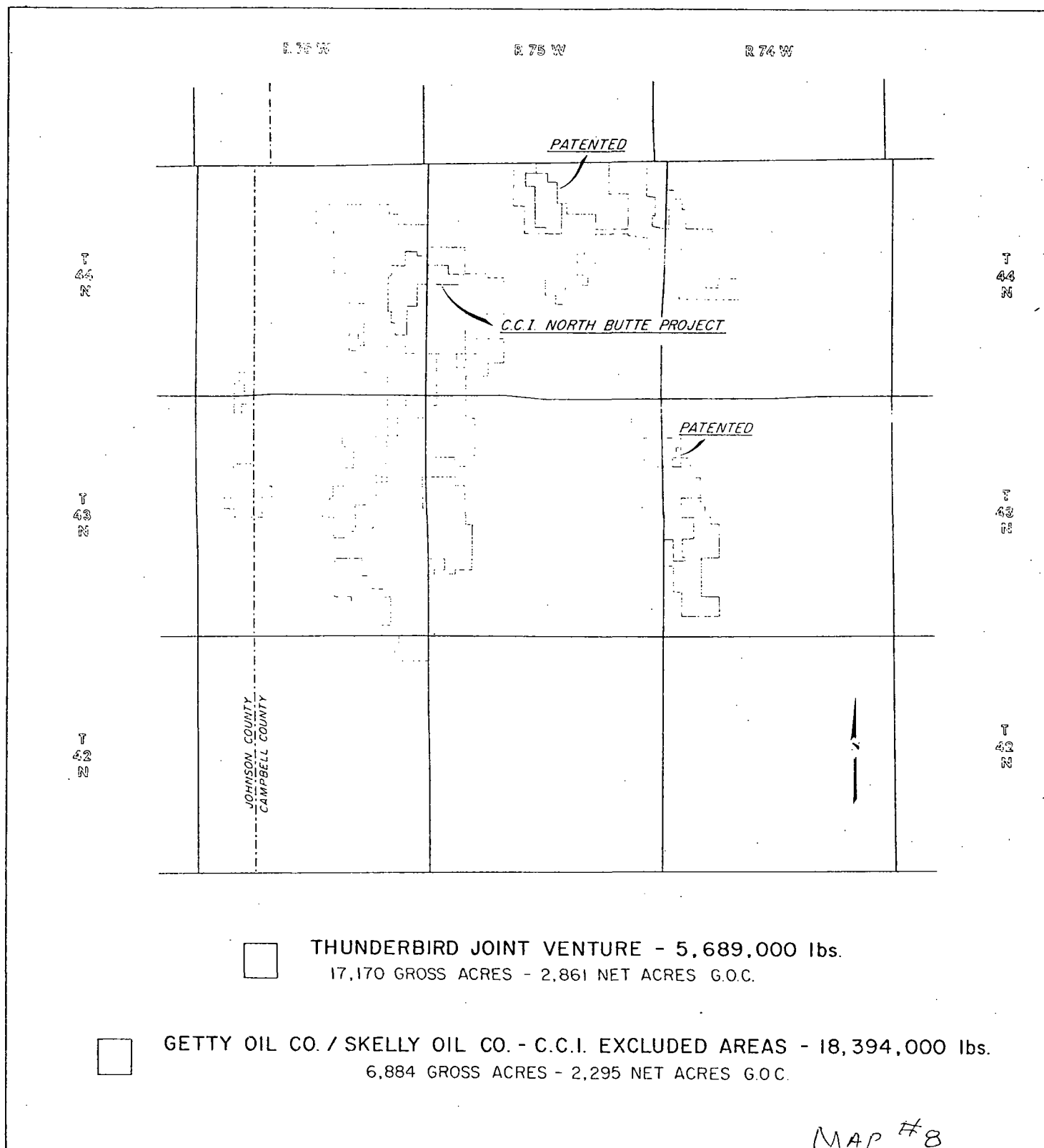
SWEETWATER COUNTY, WYOMING

11,900 NET ACRES

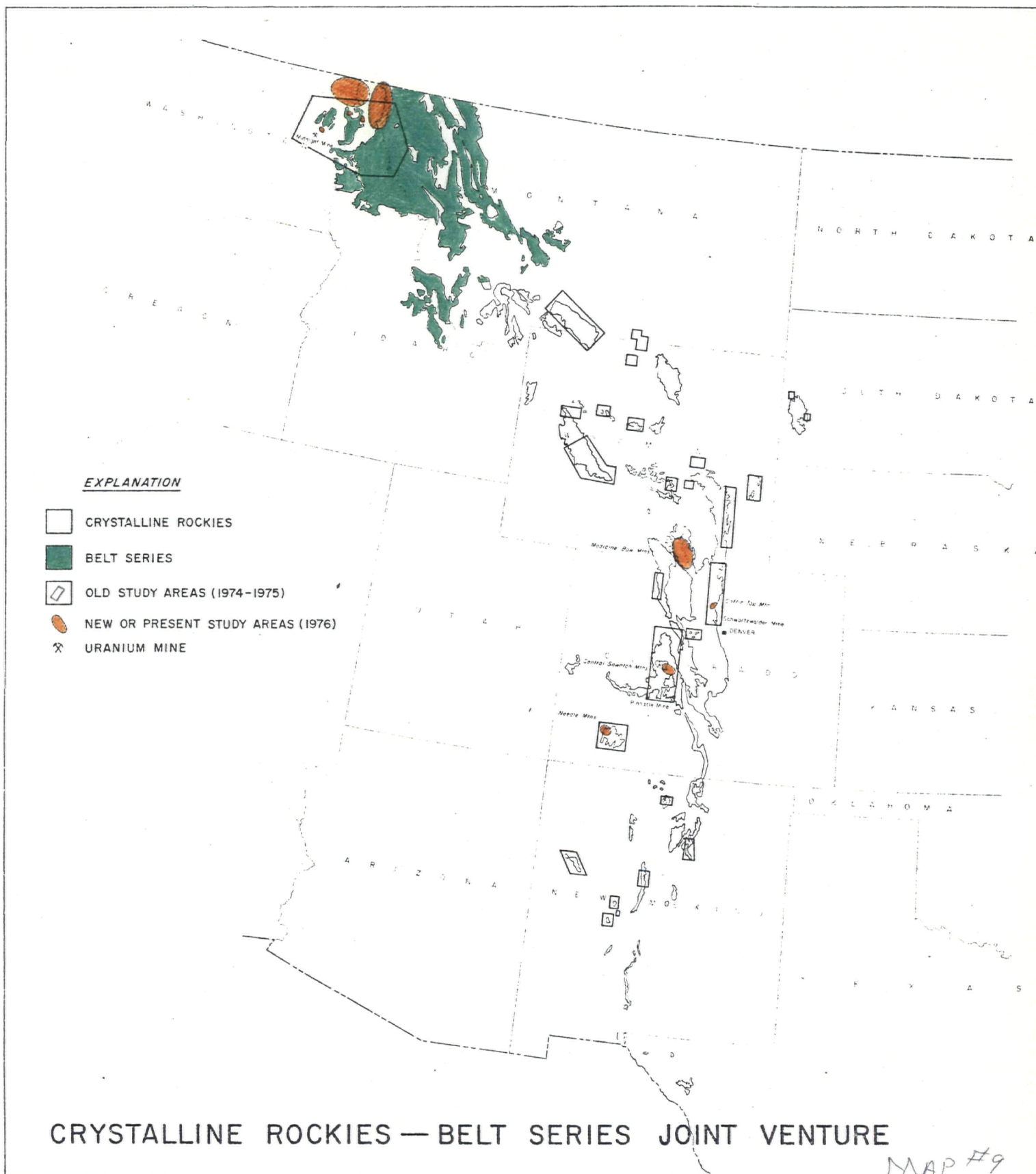
MAP #7

10-6-76

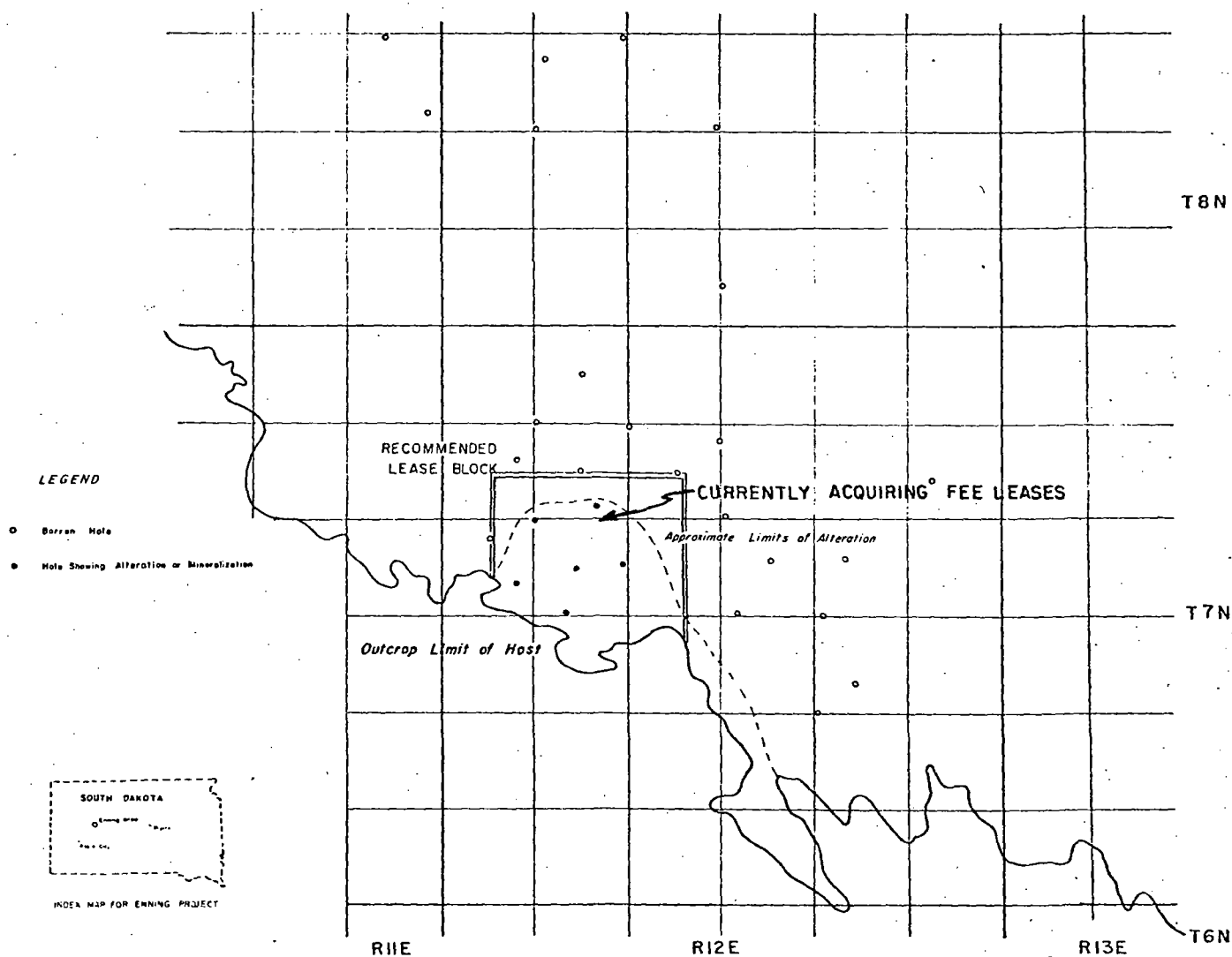
CVX 00651



CVX 00652



# GREAT PLAINS URANIUM



## ENNING PROSPECT

MEADE COUNTY, SOUTH DAKOTA

10-6-76

map #10

CVX 00654

The map displays the Saratoga Basin Prospect in Wyoming, bounded by a dashed line. The basin is divided into several geological units, each labeled with a code: Tqp (North Park Formation), Tbp (Browns Park Formation), Tcg (Conglomerate - Possible Wensath Equiv), Pz-Mz (Paleozoic - Mesozoic Sedimentary Rocks), and PC (Precambrian Crystalline Rocks). The map also shows the location of the Saratoga River and the Saratoga Channel. A rectangular area is outlined and labeled "Land Check in Progress Acquisition to Follow". Another area is labeled "Currently Staking & Acquiring Fee Land". The map includes a scale bar (0 to 10 miles) and a north arrow. An inset map shows the location of the Saratoga Basin Prospect within the state of Wyoming.

**EXPLANATION**

- Tqp North Park Formation
- Tbp Browns Park Formation
- Tcg Conglomerate - Possible Wensath Equiv
- Pz-Mz Paleozoic - Mesozoic Sedimentary Rocks
- PC Precambrian Crystalline Rocks

CARBON COUNTY, WYOMING

MAP  $\nabla$  //

10-6-76

**CVX 00655**

Salt Lake City, Utah  
September 8, 1976

MINERALS EXPLORATION	
SEP 13 '76	
<del>R. P. BLANC</del>	<del>FILE</del>
<del>S. MUESSIG</del>	
<del>D. A. NICHOLS</del>	
<del>W. M. PENNELL</del>	
<del>L. C. ROVE</del>	
<del>J. T. WILLIAMS</del>	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/ROBERT D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - AUGUST, 1976

# I. DRILLING SUMMARY

## MONTHLY DRILLING AUGUST, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Huerfano Basin	3	2,809	3	0	0	
New Mexico	Church Rock	6	10,005	6	0	0	
Wyoming	CCI-Excluded			Data not received.			Will appear in Sept.
Wyoming	CCI-Thunderbird			"	"	"	" " " "
Wyoming	Washakie Basin	19	16,200	19	0	0	
Total		28	29,014	28	0	0	

\* Mineralized hole G.T. = .20% 4' of .05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI G.T. > .20% - Min. 2' of .10 eU<sub>3</sub>O<sub>8</sub> (open pit)

POI G.T. > .60% - Min. 6' of .10% eU<sub>3</sub>O<sub>8</sub> (underground)

## 1976 DRILLING TO DATE

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Colorado	Dolores	5	12,485	5	0	0	
Colorado	Great Divide	8	9,145	8	0	0	
Colorado	Huerfano Basin	7	7,158	7	0	0	
New Mexico	Church Rock	6	10,005	6	0	0	
New Mexico	Ia Ventana	10	26,395	10	0	0	
Utah	Salt Valley	2	2,140	2	0	0	
Wyoming	CCI-Excluded	35	24,625	6	11	18	
Wyoming	CCI-Thunderbird	124	68,680	57	15	52	
Wyoming	Washakie Basin	48	36,260	47	0	1	
Total		245	196,893	91	26	71	

CVX 00656



## II. OPERATIONS

### COLORADO

#### Huerfano Basin Project

Three holes were drilled in the project area during August. Hole No. 24-71-25-1 encountered a radioactive anomaly (.01%  $eU_3O_8$ ) at a depth of 1015 feet below the surface. The radioactivity occurs at a sand-shale contact. At present, the significance of this anomaly is not known and will not be determined until additional drilling and correlation work is done in the area.

Drilling was terminated on August 23 because of the continued inability of the contractor to perform to our satisfaction. The drilling program will continue with a different contract on about September 8.

#### Great Divide Project

Drilling will resume in the project area on or about September 10.

### NEW MEXICO

#### East Church Rock State Lease

The drilling planned for 1976 in the Church Rock area has been completed. Gamma-ray logs from the drill holes showed no favorable radioactivity.

*what about unfavorable radioactivity?*

### UTAH

#### Marysvale Submittal

Sampling, ground radiometrics and general reconnaissance in the Marysvale area has revealed that the property offered to Getty Oil Company by Justheim Petroleum Company does not offer the potential of a large, open pit, low grade uranium deposit. The majority of the 200 samples analyzed gave results of less than 0.01%  $U_3O_8$ . The Justheim property submittal was formally rejected.

### WYOMING

#### Saratoga Prospect Area

A study of oil well drill cuttings by Mr. D. Gorski (Contract Geologist) confirms the presence of a favorable arkosic wedge in the Saratoga area. The Browns Park (Miocene) and underlying arkosic sand to conglomerate of unknown age (possibly Wasatch) are the prospective host beds. This wedge apparently is best developed south of Saratoga but extends at least 12 miles to the north. This wedge is characterized by moderate to abundant "granitic" derived clastics and appears to facies change to the west to tuffaceous medium to fine grained sands and siltstones and to the east to medium grained second generation sands. Pyrite is abundant and carbon trash has been recognized. Also, ground scintillation work indicates surface radioactive anomalies are present in the area. A report should be completed with recommendations to acquire or not to acquire land in the area by the middle of September.

CVX 00657

### Washakie Basin Project

Barring unforeseen operations problems, the 1976 drilling in the project area should be completed by September 8. On completion of the drilling in the Washakie Basin the rig will be moved to the Great Divide project.

Electrical surveys from holes drilled on the state leases (wide spaced) indicate potentially good uranium host sands are present in the Bridger formation. No ore grade mineralization was encountered outside of our original discovery section, but traces of mineralization (spikes) are indicated in some of the new sands penetrated in the 1976 drilling.

The mineralization (ore grade in some holes) encountered in Section 36, T15N-R98W (original discovery area) is reasonably thick (up to 12') but narrow in width. Core has been taken from two holes in the mineralized area and sent in for chemical analysis. The assay results will aid in determining the economic potential of the area.

### III. NONSANDSTONE

#### Belt Series Joint Venture

An informal meeting was held in Golden, Colorado, on August 2 to discuss the status of the Belt Series Joint Venture. The meeting was attended by representatives from each of the participating companies.

The main topics of discussion centered on 1) non-Beltian uraniferous metamorphics in the study area, and 2) an up-date on our priority target areas.

The essence of the meeting resulted in our agreement that because of manpower and time restrictions the non-Beltian metamorphic environments will take low priority and no new work will be undertaken in these environments.

The four main target areas are continuing to receive much attention in the form of general prospecting and geochemical studies. Numerous geochemical techniques are presently being tested including: pine needle, pine cone, moss, A & B soil horizons and water sampling.

+++

Mr. William Carlson, Chief Geologist of Uraners, U.S.A., Inc. (Joint Venture Operator) has announced that he will be leaving his post with Uranerz later this year. Raymond C. Barkley, formerly of Kerr-McGee Corporation, and more recently of Continental Oil Company, will replace Mr. Carlson.

CVX 00658

IV. GENERAL & SCOUTING

New Mexico

Nineteen companies were operating 36 exploration and 33 development rigs in the Grants, New Mexico, uranium district during August.

Continental Oil Company reports that uranium property leased near Crownpoint may have in excess of 20 million pounds of recoverable uranium. A second Conoco prospect, located on Laguna Indian land near the Rio Puerco on the Bernabe Grant, may also contain up to 20 million pounds of ~~ore~~<sup>ore</sup>. Large uranium deposits have been discovered in a mineral trend some six miles long, 1200 to 2000 feet beneath the surface. An overall preliminary feasibility study for mine construction is in the final stages. Work will begin on the sinking of two shafts, each 14 feet in diameter to depths of about 2000 feet, early in 1977 with completion scheduled for 1979 and first ore production in 1980.

RDC,JR:alr

cc: Messrs. Don F. Carlos  
Glenn E. McKinley

R.D. Gypston.

APPROVED

Carl H. Smith

CVX 00659

Salt Lake City, Utah  
August 11, 1976

MINERALS EXPLORATION	
AUG 15 '76	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - JULY, 1976

# I. DRILLING SUMMARY

## MONTHLY DRILLING JULY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Huerfano Basin	4	4,349	4			
New Mexico	La Ventana	4	10,800	4	0	0	
Wyoming	CCI-Excluded	19	15,050	0	.18	11	
Wyoming	CCI-Thunderbird	8	3,995	0	3	5	
Wyoming	Washakie Basin	18	13,380	17		1	12.5' of .13% eU <sub>3</sub> O <sub>8</sub>
Total		53	47,574	25	11	17	

\* Mineralized Hole G.T. = .20%, Minimum 4' of .05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI G.T. > .20% - Min. 2' of .10% eU<sub>3</sub>O<sub>8</sub> (open pit)  
POI G.T. > .60% - Min. 6' of .10% eU<sub>3</sub>O<sub>8</sub> (underground)

## 1976 DRILLING (TO DATE)

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Colorado	Dolores Anticline	5	12,485	5	0	0	
Colorado	Great Divide	8	9,145	8	0	0	
Colorado	Huerfano Basin	4	4,349	4	0	0	
New Mexico	La Ventana	10	26,395	10	0	0	
Utah	Salt Valley	2	2,140	2	0	0	
Wyoming	CCI-Excluded	35	24,625	6	11	18	
Wyoming	CCI-Thunderbird	124	68,680	0	15	52	
Wyoming	Washakie Basin	29	20,060	28	0	1	
Total		217	167,879	63	26	71	

CVX 00660

## II. OPERATIONS

### COLORADO

#### Huerfano Basin Prospect

The first hole, 277135-1 encountered a 130-foot thick interval from 810-940 feet with count averaging 4X BG (200 cps) (BG = 50 cps) and peaks to 1000 cps. The count is in a sandy section above the contact with the Pierre Shale. Three additional holes were drilled in the prospect area during the month but none contained any significant radioactive anomalies.

We are presently staking approximately 200 additional claims in the area.

Cominco, Pioneer Nuclear and Exxon have claims in the area.

#### Great Divide Project

No holes were drilled in the prospect area during July. The rigs are presently drilling in the Washakie Basin and on completion of this work the rigs will be moved to the Great Divide project and drilling will resume.

Some recent surface mapping has been done in the area. It is hoped this work will assist in evaluating the stratigraphic relationship of the exposed sands.

### NEW MEXICO

#### La Ventana Project

Four holes for a total of 10,800 feet were drilled on the prospect during July. None of the holes contained significant mineralization. The rig has been moved to our state leases in the East Church Rock district.

### WYOMING

#### Washakie Basin Project

Drilling during the month in the project area has been confined to one section (area where original discovery was made). Some of the drilling was on 200-foot centers. These close-spaced holes located in order to aid in defining the trend of mineralization. Three mineralized intervals were cored in three different locations. Two of the cores intersected limb mineralization (thin) and the third core intersected a thick zone of mineralization (12.5 ft. .13% eU<sub>3</sub>O<sub>8</sub>) near the roll front. The core is to be split and chemically assayed. It is expected that the chemical grades will be higher than the ore grades calculated from the gamma-ray logs.

By whom?  
why?

CVX 00661

On completion of the drilling in the mineralized section the rigs will be moved to other sections in the project area for wide spaced drilling to evaluate and determine the potential of the project.

Saratoga Area

Mr. Dan Gorski (Contract Geologist) has been evaluating the Saratoga area. He was visited in the field and in subsequent office discussions several specific areas of further work were recommended. A preliminary land check is in progress in the area.

CCI-Thunderbird JV

Draft copies of the statistical reserve estimates report being prepared by Colorado School of Mines Research Institute were reviewed in Salt Lake. This report will be reviewed and comments submitted to CSMRI by the Salt Lake City staff.

III. GENERAL

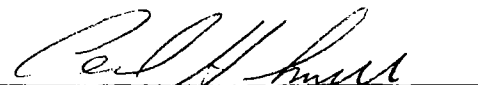
Two submittals were visited during the month. One--located near Mountain Home, Idaho--consisted of a narrow, discontinuous, quartz vein in quartz monzonite. The vein showed minor iron sulfides, weak radioactivity, and no recognized uranium minerals. The submittal was formally rejected.

The second submittal consisted of 107 unpatented claims immediately northeast of the Marysvale uranium district. Considerable rock alteration exists scattered throughout the area. Locally good secondary uranium mineralization is present. Unlike the main productive Marysvale uranium area, these claims cover veins and disseminations in volcanics rather than in plutonic rocks. The submittal requires additional consideration to assess its possible merits.

RDC,JR:alr

cc: Messrs. Don F. Carlos  
Glenn E. McKinley

APPROVED



CVX 00662

Salt Lake City, Utah  
July 15, 1976

MINERALS EXPLORATION	
JUL 19 1976	
R. P. BLANC	
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/ROBERT P. BARNES

SUBJ: MONTHLY PROGRESS REPORT - JUNE, 1976

# I. DRILLING SUMMARY

## MONTHLY DRILLING JUNE, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Dolores Anticline	3	7,465	3	0	0	
Colorado	Great Divide	8	9,145	8	0	0	
New Mexico	La Ventana	6	15,595	6	0	0	
Wyoming	CCI-Excluded	4	6,605	4	0	0	
Wyoming	CCI-Thunderbird	18	9,925	5	0	13	
Wyoming	Washakie	11	6,680	11	0	0	
Total		50	55,415	37	0	13	

\* Mineralized Hole = G.T. > 0.20, Minimum 4' of 0.05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI = G.T. > 0.20, Minimum 2' of 0.10% eU<sub>3</sub>O<sub>8</sub> (open pit)

POI = G.T. > 0.60, Minimum 6' of 0.10% eU<sub>3</sub>O<sub>8</sub> (underground)

## 1976 DRILLING (TO DATE)

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Colorado	Dolores Anticline	5	12,485	5	0	0	
Colorado	Great Divide	8	9,145	8	0	0	
New Mexico	La Ventana	6	15,595	6	0	0	
Utah	Salt Valley	2	2,140	2	0	0	
Wyoming	CCI-Excluded	16	9,575	6	3	7	
Wyoming	CCI-Thunderbird	116	64,685	57	12*	47	
Wyoming	Washakie	11	6,680	11	0	0	
Total		164	120,305	95	15	54	

\*Corrected from last month

CVX 00663

## II. OPERATIONS

### COLORADO

#### Dolores Anticline Prospect

Five holes have now been completed on the Dolores Anticline prospect. Drilling has, for the present, been suspended pending outcome of negotiations with Florida Power and Light.

These five holes give us a profile of holes along the north and east margin of our claim block. We now have a better understanding of the stratigraphy of the host rock, the basal Chinle (Moss Back Mbr.) sandstone. In brief, it appears that the sands are better developed down the flank of the anticline than toward the crest. We have also confirmed that the Moss Back rests on eroded Cutler sandstones of Permian age. A similar relationship exists at Lisbon Valley. Normally the Chinle rests on the Moenkopi formation.

#### Great Divide Prospect

Eight holes were drilled on this prospect prior to moving the drilling rigs to the Washakie Basin. These holes were located in the northeast part of the claim block and were located to test an area on strike and down dip from surface occurrences of anomalous radioactivity and uranium mineralization. Unfortunately, these drill holes failed to extend the mineralization. However, only a small part of this property has been tested and drilling will continue following completion of the drilling at Washakie Basin.

#### Huerfano Basin Prospect

Contacts with land owners were made and hole locations staked this month. Drilling is expected to begin in July.

### NEW MEXICO

#### La Ventana Project, Sandoval County

In June, we drilled the first six holes of the 1976 10-hole exploratory drilling program on this prospect. These holes indicate the presence of thick section of Jackpile sandstones trending south-southwest from the outcrop. Studies of cross-bed direction on the outcrop confirm the south-southwest direction of sediment transport. Also in this area, the Cretaceous Dakota formation is in unconformable contact with the Jackpile sandstone. Both of these geologic conditions are considered to be favorable to the formation of uranium ore deposits.

#### East Church Rock

Mr. Bob Nakoaka, Albuquerque contract geologist, has developed a 7-hole program to test Getty Oil Company state leases near Pinedale, New Mexico. The drill holes would range in depth from 1100 to 1700 feet and would total 11,000 feet. Hole density would be about one hole per one-half section.



WYOMING

Washakie Basin Prospect

Eleven holes were drilled in the SE $\frac{1}{4}$ , Sec. 36, T15N-R98W. These holes were located so as to provide more information on the mineralization discovered here previously. Analysis of these drill hole logs should permit coring the mineralized cell edge.

CCI-Thunderbird

Colorado School of Mines is presently preparing a statistical analysis of the ore reserves on the North Rolling Pin area. This report will be a prototype of the reports to be prepared by them for all the mineralized areas. Maps of the other areas are being proofed for correctness.

NONSANDSTONE URANIUM

Grand Canyon Breccia Pipe Project

We have concluded that some anomalies, possibly representative of concealed mineralized breccia pipes, exist in our test area. Three areas, the largest being about 2600 feet square, contain coincident radiometric "anomalies" (1.5 X background) and various plus 2 sigma anomalies in various elements such as Cu, Co, Ni, Zn, Pb, and Ag. These elements plus uranium are present in the model Orphan lode deposit. However, more work will likely be required to delineate specific drill sites within each of three selected areas.

Urania-Belt Series Joint Venture

The Belt Series Joint Venture has outlined four target areas in eastern Washington based on geologic field studies and geochemical sampling. Investigation is directed to the discovery of uranium ore deposits similar to that at the Midnight Mine near Spokane, Washington.

Appalachians

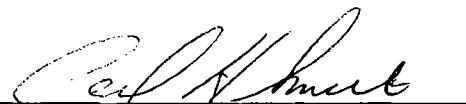
Mr. R. W. Gloyn and a geological contractor, Mr. Ralph Barnard, spent two weeks in the field examining areas of anomalous radioactivity discovered during recent airborne surveys. As a result of this field investigation Mr. Barnard recommended further work in four areas with alkalic intrusive rocks in the New England states. Rocks of this type host major uranium ore deposits in Canada and Africa.



RPB:alr

cc: Messrs. Don F. Carlos  
Glenn E. McKinley

APPROVED



CVX 00665

Salt Lake City, Utah  
June 11, 1976

MINERALS EXPLORATION	
JUN 14 1976	
R. P. BLANC	
S. MURPHY	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/ROBERT P. BARNES

SUBJ: MONTHLY PROGRESS REPORT - MAY, 1976

# I. DRILLING SUMMARY

## MONTHLY DRILLING MAY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
yoming	CCI-Excluded	--	--	--	--	--	
yoming	CCI-Thunderbird	35	17,545	13	22	19	
olorado	Dolores Anticline	2	5,020	2	0	0	
Total		37	22,565	15	22	19	

\* Mineralized Hole = G.T. 0.20, Minimum 4' of 0.05% eU<sub>3</sub>O<sub>8</sub>

\*\* POI = G.T. 0.20, Minimum 2' of 0.10% eU<sub>3</sub>O<sub>8</sub> (open pit)

POI = G.T. 0.60, Minimum 6' of 0.10% eU<sub>3</sub>O<sub>8</sub> (underground)

## 1976 DRILLING (TO DATE)

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
olorado	Dolores Anticline	2	5,020	2	0	0	
tah	Salt Valley	2	2,140	2	0	0	
yoming	CCI-Excluded	12	2,970	2	3	7	
yoming	CCI-Thunderbird	98	54,760	52	31	34	
Total		114	64,890	58	34	41	

# II. GENERAL

The Phillips discovery in the Seven Lakes area is probably much larger than their presently announced reserves of 30 million pounds of U<sub>3</sub>O<sub>8</sub>. After reducing their number of delineation drills to seven, they are presently attempting to increase this to 12 again. They are reportedly drilling holes up to 6000 feet

CVX 00666

in depth following their trend to the northeast. They recently hired a mine-mill superintendent so they may be contemplating an early start on developing their known ore deposit.

### III. OPERATIONS

#### COLORADO

##### Dolores Anticline Prospect

In June, 1975, Getty Oil Company located 409 claims totaling 8180 acres on the south plunge of the Dolores anticline in Dolores County, Colorado. This area has the same host rocks of similar lithology and thickness in the same structural and stratigraphic setting as that of the Lisbon Valley uranium ore deposits.

During the month of May, two holes of a five-hole exploration drilling program were completed. These two holes verified the envisioned geologic structure and stratigraphy but failed to discover anomalous radioactivity. Three additional holes are to be drilled in June.

##### Great Divide Prospect

Drilling commenced with two rigs on the Great Divide prospect over the Memorial Day weekend.

The Great Divide prospect is a follow-up to the successful Washakie Basin prospect. Following the discovery of significant uranium mineralization in thin sandstones of the Bridger formation in the Washakie Basin, other nearby areas were studied for their potential of having similar deposits. Discovery of surface occurrences of uranium mineralization together with favorable host sandstone beds in the subsurface lead to the acquisition of about 30,000 acres of claims and fee leases in the spring of this year. Fifty holes are programmed to be drilled this summer.

#### NEW MEXICO

##### La Ventana Project, Sandoval County

Although drilling commenced on the La Ventana prospect during the last week of May, the first hole was not completed by month's end.

Six holes were drilled on the La Ventana prospect in 1975. These holes established that the Cretaceous Dakota sandstone rests unconformably on Jurassic Morrison sandstones equivalent to the Jackpile sandstone of the southeastern San Juan Basin. This stratigraphic relationship is believed to be a critical factor in the formation of the uranium ore deposits found in the Jackpile sandstone. Significantly, two of the 1975 drill holes discovered anomalous radioactivity. In one hole the anomalous interval was in the Jackpile sandstone while in the other it was in the lower Westwater sandstone.

CVX 00667

Church Rock Area

Recent competitor activity has dictated we take a closer look at our five state leases east of Pinedale, New Mexico. To that end we have asked Bob Nakoaka, Contract Geologist, to prepare a drilling program for our state leases.

WYOMING

CCI-Thunderbird

Work is nearing completion on the drafting of intercept maps for the Thunderbird deposit areas. Concurrent discussions have been held with Ray Merry of the Colorado School of Mines Research Institute regarding the methodology and format of the final ore reserve reports to be prepared by them.

CCI-Excluded

The Cleveland-Cliffs Iron Company is commencing to work on a new set of base maps for the Excluded Areas. It is anticipated that these new maps will be used to prepare ore reserve estimates of the Excluded Areas.

+++++

NONSANDSTONE URANIUM

Grand Canyon Breccia Pipe Project

The purpose of the Grand Canyon Breccia Pipe project is to locate uranium-copper ore deposits similar to the Orphan Lode on the rim of the Grand Canyon. A large area south of the National Park was grid sampled last year. These samples were analyzed and the results plotted and contoured by computer.

Study of the contour maps of the concentration of 22 elements considered to be geologically significant has revealed several areas of coincident occurrence of anomalous concentrations of certain of these elements. Methods are presently being reviewed that will permit better definition of prospect areas and drill targets.

Crystalline Rockies Joint Venture Project

A joint venture meeting of the participants was held in Golden, Colorado, last month. The purpose of this meeting was to review and re-evaluate our present state of knowledge and to formulate new ideas based on our previous two years experience. Together this review was supposed to provide new geological concepts or adapt old concepts to be used in the Crystalline Rockies program. This review work was initiated to assist in our selecting or screening of previous or proposed exploration targets by comparison with known economic uranium deposits. Some of these objectives were met; some very important ones were not.

As a result of the meeting three areas previously explored and studied were recommended by the French geologists for further work. These areas are according to importance:

1. Central Sawatch Range, Colorado
2. Coffin Top Mountain area of the Front Range, Colorado
3. Needle Mountains, southwestern Colorado

Three other new areas where future exploration possibilities might exist were outlined. These areas are possibly ranked according to priority:

1. Medicine Bow Mountains, Wyoming
2. Sangre de Cristo Range, Colorado and New Mexico
3. Marshall Pass region, Colorado

#### Appalachian Crystalline Program

The program to evaluate the potential of the Appalachians for uranium ore deposits has utilized the following multifaceted approach:

- 1) Review of geologic literature and reports or uranium occurrences in the eastern states.
- 2) Discussions with Federal, State and university personnel who are involved with the uranium exploration effort in the eastern United States.
- 3) Evaluation of airborne radiometric surveys prepared by ERDA contractors.
- 4) Field investigation of anomalies, uranium occurrences and favorable areas to determine the geologic setting of each.

Robert P. Barnes

RPB:alr

cc: Messrs. Don F. Carlos  
Glenn E. McKinley

APPROVED

Ed H. Smith

CVX 00669

Salt Lake City, Utah  
May 17, 1976

MINERALS EXPLORATION	
MAY 24 '76	
R. P. BLANC	
S. NUSSIG	
D. A. NICHOLS	
W. J. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJECT: MONTHLY PROGRESS REPORT - APRIL 1976

# I. DRILLING SUMMARY

## MONTHLY DRILLING MARCH & APRIL, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Excluded	10	1750	0	3	7	
Wyoming	CCI-Thunderbird	50	28835	26	9	15	
Utah	Salt Valley	2	2140	2	0	0	
Total		62	32,725	28	12	22	

\* Mineralized Hole = G. T. < .20% U<sub>3</sub>O<sub>8</sub> 4' of .05%  
\*\* POI - G. T. > .20% U<sub>3</sub>O<sub>8</sub> Min. 4' of .20% (open pit)  
POI - G. T. of .60% U<sub>3</sub>O<sub>8</sub> Min. 6' of .10% (underground)

## 1976 DRILLING THROUGH APRIL, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Utah	Salt Valley	2	2140	2	0	0	
Wyoming	CCI-Excluded	12	2970	2	3	7	
Wyoming	CCI-Thunderbird	63	37,215	39	9	15	
Total		77	42,325	43	12	22	

# II. GENERAL

The Follow-Up Report concerning Salt Lake City minerals exploration programs has been completed and submitted to Management for review.

\*\*\*\*

Dr. Phil Merritt, who is a consultant for Florida Electric, was in the Salt Lake City office on April 26 to discuss our farmout proposal of the La Ventana, Huerfano Basin, Dolores Anticline and Salt Valley projects. He indicated that his recommendations concerning the proposal would be submitted to Florida Electric in the near future.

CVX 00670

Phillips Petroleum Company is starting up a uranium exploratory drilling program near Delta, Utah during the week of April 19.

++++

Anaconda has taken over Pechiney's Green River Project and is continuing to explore with one rig.

++++

A meeting was held in E.R.D.A.'s Grand Junction, Colorado office on April 28, 1976. Those attending the meeting from Getty Oil Company were Messrs. L. Rove, N. Avary and R. D. Cypert, Jr. The meeting was of a confidential nature concerning exploration and production plans, also on up-grading of  $U_3O_8$  ore reserves.

++++

#### SOUTHERN APPALACHIANS

The recently released ERDA report GJBX-9(76) entitled Raw Data from Orientation Studies in Crystalline Rock Areas of Southeastern United States was examined. Two areas, Lamar County, Georgia, and Econe County, South Carolina, exhibit large areas of anomalous stream sediments and a third--Avery County, North Carolina--shows scattered high values. A summary report amplifying these conclusions has been prepared. Research on this area is continuing and it is planned to go to Grand Junction within the week to collect additional information. It is hoped that a summary report on the Uranium Potential of the Southern Appalachians can be prepared within 3-4 weeks.

++++

#### NONSANDSTONE URANIUM

Mr. Ken Rank is currently in the field scouting and examining calcrete and potential crystalline areas in Nevada and Arizona. The computer plots of the Breccia Pipe geochemical survey have been completed and should be in the geologist's hands by early next week. Literature research is continuing on the uranium potential of the crystalline Appalachians. Several "geologically favorable" sequences appear to occur in the upper Precambrian of the Blue Ridge, specifically the Wendowee belt of Georgia and the Anakeesta Formation of the Great Smoky Group in North Carolina. Research of published ground anomalies and airborne surveys in ERDA's Grand Junction office is scheduled for the first part of next week.

#### VAN HORN AREA, WEST TEXAS

Five areas in the Precambrian Carrizo Mountain Group of the Van Horn area are permissive for Beaverlodge-Jabiluka type deposits. Favorable features are the appropriate age of the potential host, a permissive lithology, correct metamorphic grade, evidence of several periods of metamorphism and tectonism, evidence of cataclasis and accompanying retrograde metamorphism and hydrothermal activity as indicated by quartz tourmaline veins and "disseminations." Less favorable features are the lack of significant reported radiometric anomalies and the seeming lack of anatectic or syntectonic granites.

CVX 00671

Future literature study will be concentrated on the Llano uplift, Texas, the Piedmont-Blue Ridge area of southeastern United States and the Adirondack Lowlands.

### III. OPERATIONS

#### COLORADO

##### Dolores Anticline Project

Drilling equipment will be moved to the first location on May 3; the first hole is projected to be drilled to a depth of 2500 feet.

##### Great Divide Project, Moffat County, Colorado

Babco Drilling Company was awarded the drilling contract for the Great Divide-Washakie Basin projects. Plans are to start drilling with two rigs on May 31, 1976.

#### UTAH

##### Salt Valley Project, Grand County

A second hole was completed downdip from the first hole on April 21. This hole showed a thicker sand section in the Moss Back. As in the first hole, the Moss Back rests unconformably on the Cutler formation. Although the hole had no count, confirmation of the envisioned stratigraphy and stratigraphic relationships is encouraging. A third hole further downdip was scheduled but canceled because of the depth limit of the rig. During the drilling program we were able to acquire copies of the two logs with anomalous count drilled nearby by Jay Coates.

#### URANIA EXPLORATION, INC.

Urania continued work on their assessment of the favorability of uranium mineralization within the Rocky Mountain Province with the assistance of their French geologists. They have indicated that a final report will be available prior to the meeting of the partners scheduled for May 18 and 19, 1976, wherein they will outline their findings and recommendations for further work.

Messrs. C. H. Smith, R. W. Gloyn and K. Rank, representing Getty Oil Company, Salt Lake City, are making plans to attend those meetings.

### IV. SCOUTING

#### Arizona

Geomet Mining and Exploration Company, Boulder, Colorado have recently staked lode claims over valid placer claims in the Black Butte area, Maricopa County. In the past few weeks they have drilled several holes to depths between 1200 and 1400 feet. Their drill targets are radon gas anomalies.



### Colorado

Kerr-McGee is presently drilling the north end of Gypsum Valley anticline. Their target is the basal sandstone of the Chinle Formation.

++++

Exxon is reportedly drilling exploration holes seven miles north of Silverton, Colorado. Several radioactive prospects in the area have been reported in the literature as veins and breccia zones in Tertiary Volcanics. Exxon's prospect is apparently located in a roof zone of a Tertiary plug. The roof zone is radioactively anomalous.

### New Mexico

The following information was taken from the New Mexico Newsletter published for April, 1976:

APRIL - 1976

#### DRILLING

#### Tabulation of Active Drilling Rigs in N.M.

<u>Company</u>	<u>Exploration</u>	<u>Delineation and</u>
		<u>Development</u>
Anaconda	---	3
Conoco	3	4
Exxon	---	3
Frontier Mining	1	---
Gulf	---	5
Homestake	1	---
Hydro-Nuclear	---	1
Keradamex	1	---
Kerr-McGee	---	4
Mobil	6	---
Phillips	2	6
Pioneer Nuclear	2	---
Ranchers	2	---
Sohio	---	1
Teton	7	---
Union Carbide	1	---
United Nuclear	---	2
Utah International	2	---
<hr/>		<hr/>
28		29

### Drilling Summary

Anaconda continues with three rigs on development around the Paquate and Jackpile mines in Sec. 4, T10N-R5W and Sec. 35, T11N-R5W. No exploration activity is reported.

Conoco has three rigs busy on delineation in the Bernabe Montana Grant in S/2, T12N-R1&2W, and one rig on delineation drilling at Crownpoint in Sec. 24, T17N-R13W. It also reports one exploration rig on Sec. 18, T16N-R10W on Indian allotted property southeast of Borrego Pass, one exploration rig in Sec. 30, T18N-R12W north of Crownpoint, and one exploration rig in Sec. 34, T20N-R13W, east of the Navajo reservation.

CVX 00673

Exxon is beginning its uranium drilling program for this year with three development rigs on the L-Bar Ranch 15 miles northeast of the Sohio mill.

Frontier Mining continues its exploration drilling with one rig on the Pena Ranch, Sec. 8, T15N-R9W.

Gulf reports two delineation rigs at San Mateo, Secs. 14 & 23, T13N-R8W, and two delineation rigs at West Largo, Secs. 17 & 19, T15N-R10W, and one rig on development at Mariana Lake, Secs. 4 & 11, T15N-R14W.

Homestake has been exploring with one rig in Sec. 16, T12N-R3W near the Rio Puerco.

Hydro-Nuclear had one development rig busy on Sec. 14, T14N-R10W. in Ambrosia Lake.

Keradamex continues its exploration drilling with one rig in Sec. 28, T13N-R8W.

Kerr-McGee reports two development rigs at their Church Rock Mine 1, Sec. 34, T17N-R16W, one development rig in Sec. 30, T14N-R9W at Ambrosia Lake, and one development rig in the east Ambrosia Lake area.

Mobil has six exploration rigs busy, four west of Crownpoint near Government Wells, Sec. 16, T17N-R13W, and two east of Monument, Sec. 28, T17N-R12W.

Phillips continues drilling on their Nose Rock property with four development rigs in the SW/4, T19N-R11W, two development rigs in the NE/4, T18N-R12W, and two exploration rigs in the N/2, T19N-R11W.

Pioneer Nuclear still has two rigs exploring in the Dalton Pass area in Secs. 2 & 3, T17N-R14W.

Ranchers has two exploration rigs drilling on the Todilto bench south of Ambrosia Lake, T13N, R9W.

Sohio has one development rig on the L-Bar Ranch, Sec. 13, T11N-R5W.

Teton continues its exploration drilling with seven rigs in the Dalton Pass area, Secs. 4, 5, 6, 13, 23, & 24, T17N-R14W.

Union Carbide has one exploration rig in the Hagan Basin, SW/4, T14N-R6E.

United Nuclear has one development rig at their St. Anthony mine in Sec. 30, T11N-R4W, and another rig coring in the Churchrock area, Sec. 9, T16N-R16W.

Utah International continues drilling with two exploration rigs in the Borrego Pass area in T15N-R10W.

RDC,JR:alr

cc: Messrs. Don F. Carlos  
Glenn E. McKinley

APPROVED

*R.D. Gypert*

*Ed H. Hines*

CVX 00674

Salt Lake City, Utah  
April 9, 1976

MINERALS EXPLORATION	
APR 19 1976	
R. P. BLANC	<i>ppr</i>
S. MUESSIG	<i>m</i>
D. A. NICHOLS	
W. M. PENNELL	<i>WMP</i>
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - MARCH, 1976

I. DRILLING SUMMARY

MONTHLY DRILLING  
FEBRUARY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Excluded	2	1,220	2			Drilling statistics not received in time for Feb. report
Wyoming	CCI-Thunderbird	1	500	1			
Total		3	1,720	3			

*W. M. Pennell -  
I like to receive  
data on New Mexico  
w/you with a  
map - when you  
have time 1985*

No March drilling reported as of this date.

\*Mineralized hole = G.T.  $\leq$  .20%  $U_3O_8$  4' of .05%  
 \*\*POI - G.T. of .60% Min. 6' of .10% (underground)  
 POI - G.T. of .20% or min. 4' of .05%

1976 DRILLING  
THROUGH FEBRUARY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Wyoming	CCI-Excluded	2	1,220	2	0	0	
Wyoming	CCI-Thunderbird	13	8,380	13	0	0	
Total		15	9,600	15	0	0	

CVX 00675

## II. GENERAL

Research is continuing on common characteristics and geologic environments of the following world-wide uranium types:

1. Rössing (anatectic type)
2. Beaverlodge-Alligator River-type
3. Contact type (Midnight)
4. Stockwork type
5. Alkali's syenite-granite & carbonotite associated type

Research is directed toward geologic environments (model) and field guides with an emphasis on analogous situations in the Continental United States.

Letters to obtain bids to drill the Washakie Basin and Great Divide Projects have been sent out. As of this date, three have submitted bids.

A meeting reviewing the programs and goals of the Minerals Exploration Department was held in the Salt Lake City District office on March 25, 1976. Those attending the meeting from the Los Angeles office were:

Messrs. Paul Carlton  
S. Muessig  
R. Blanc  
H. Fader  
W. Pennell

A meeting concerning the Weld County, Colorado (Grover Project) farmout was held on March 29 with Mr. Robert Rayforth, Exploration Manager for Powerco Resources. (Powerco has been contracted by Westinghouse to do the development drilling and evaluation). The meeting was held in Powerco's Fort Collins, Colorado, exploration offices.

Since inception of the farmout, Powerco has drilled approximately 350 holes for a total of 100,000 feet. Westinghouse has cored 17 holes for a total of 800 feet. Core recovery has been excellent.

Recent drilling has developed a second roll front in the area and Mr. Rayforth indicates that the reserves have been increased substantially. At present, they have four rigs under contract on the project. Two rigs are drilling development holes; one rig is coring and the fourth rig is used in cementing off the water zones. They are contracting two additional rigs to be put on in the near future.

## III. OPERATIONS COLORADO

### Great Divide Project, Moffat County

Approximately 30,000 acres have been staked and leased in the Great Divide project area (discovery post set). Setting of the side centers and corner posts will be completed within 60 days.

CVX 00676

UTAH

Salt Valley, Grand County

Carl Burley has recently completed staking of the lode claims adjoining our state leases in the Salt Valley project area. Due to competition, only half of the property originally outlined for acquisition was staked (100 claims). An independent from Moab staked the remaining acreage.

URANIA EXPLORATION INC.

Mr. Tony Durand, Chief Geologist of AMOK, has arrived in Golden, Colorado, to begin reviewing the data collected by Urania to interpret the results in light of present knowledge concerning crystalline host uranium deposits. Mr. J. P. Pfiffelman, Exploration Manager of MOKTA, is planning to arrive in the near future to assist in the evaluation along with Marcel Tabouret.

IV. SCOUTING

New Mexico - Grants Uranium District

A land and mineral ownership check has been completed in the San Juan Basin, New Mexico, on the following lands (Mr. Guy L. Scarborough of Mineral Service Company made the land check):

McKinley County, New Mexico

Twps. 16, 17 and 18 North, Rge. 5 West

San Juan County, New Mexico

Twp. 22 North, Rges. 9 and 10 West

Twp. 16 North, Rge. 5 West

This township is predominately Public Domain which has been located by G. M. Raines, et. al., WEF Claims and John Triantis. Also, a portion of the Ignacio Grant is in the south part of the township which is leased to Pioneer Nuclear and Getty Oil Company.

Twp. 17 North, Rge. 5 West

Essentially, the western half of this township is Santa Fe-Pacific Railroad Minerals that are not under lease but are not available due to a moratorium on mineral leasing. There are scattered portions of Public Domain and Indian allocated lands that are open. Portions of Section 1, 3, 11, 13, 15, 23, 25 and 27 have been withdrawn from mineral entry by location under the provisions of Public Land Order 2198, dated August 26, 1960. State lands in Sections 2, 32 and 36 are under lease to John R. Meadows and Section 16 is under lease to Exxon Corporation.

Twp. 18 North, Rge. 5 West

This township is predominately open Public Domain with a few scattered parcels of Indian allotted lands. State Sections 32 and 36 are under lease to John R. Meadows and Section 16 is leased by Ranchers Exploration.

The uranium host beds are structurally lower in this township than those in the Ignacio Chavez Grant (estimated drilling depths for T18N, R5W - < 4000 feet).

Twp. 22 North, Rges. 9 and 10 West

These two townships are mostly open Public Domain with a fair amount of Indian allotted and Tribal lands.

The recent Phillips Seven Lakes discovery is approximately 21 miles southwest of this open land and is updip from the host beds in Twp. 22 North, Rges. 9 and 10 West. The estimated drilling depths in the open area are probably 4500 feet or greater.

Following is a tabulation of uranium drill rigs operating in New Mexico during March, 1976 (from New Mexico Newsletter):

<u>Company</u>	<u>Exploration</u>	<u>Delineation and Development</u>
Anaconda		3
Bokum		1
Conoco		7
Frontier Mining	1	
Gulf		5
Homestake		1
Keradamex	1	
Kerr-McGee	2	1
Mobil	5	
Phillips		6 (?)
Pioneer Nuclear	2	
Ranchers	2	
Sohio		1
Union Carbide	1	
United Nuclear	7	2
Utah International	2	
Western Nuclear	—	<u>1</u>
	23	28

Drilling Summary

Anaconda continues with three rigs on development around the Paguate and Jackpile mines in Sec. 4, T10N-R5W and Sec. 35, T11N-R5W. No exploration activity reported.

Bokum has one rig involved in pump tests in the Marquez area.

Conoco has three rigs busy on delineation in the Bernabe Montana Grant in S/2, T12N-R1&2W, and four rigs on delineation drilling at Crownpoint in T17N-R12&13W.

Frontier Mining continues to drill exploration holes with one rig north of Ambrosia Lake in Sec's 8 and 18, T15N-R9W.

Gulf still has two development rigs on the Main Ranch in Sec's 14&23, T13N-R8W, and three rigs on delineation at West Largo in Sec's 17&19, T15N-R10W.

Homestake continues with one development rig in Sec. 16, T11N-R9W near the old F-33 Mine.

Keradamex drilled in Sec. 33, T13N-R8W with one exploration rig.

Kerr-McGee reports one development rig west of Ambrosia Lake and two exploration rigs in the Northeast Churchrock area, Sec's 9&10, T17N-R16W.

Mobil has five exploration rigs drilling in Sec. 15, T17N-R13W northwest of Crownpoint.

Phillips is reported to have six or seven rigs on their Nose Rock property west of Seven Lakes.

Pioneer Nuclear continues with two exploration rigs in the Dalton Pass area in Sec's 2&3, T17N-R14W.

Ranchers still has two rigs exploring on the Todilto bench south of Ambrosia Lake in T13N-R9W.

Sohio has one rig on development jointly with Hydro-Nuclear in Ambrosia Lake (Sec. 14, T14N-R10W.).

Union Carbide has one rig exploring the Hagan Basin the SW/4, T14N-R6E.

United Nuclear (Teton) has one development rig at their St. Anthony Mine in Sec. 30, T11N-R4W, and one at Northeast Churchrock in Sec. 9, T16N-R16W. Teton continues with seven rigs exploring the Dalton Pass area in T17N-R14W.

Utah International has two rigs exploring in the Borrego Pass area in T15N-R10W.

#### New Mexico Newsletter

Gulf made progress during 1975 in development work on the largest and deepest uranium mine in the U.S. at Mt. Taylor. This 100 million pound ore body will be mined at depths up to 4,500 feet below the surface. Gulf will spend \$140 million to put the mine into production in 1978, and the mill complex will cost another \$175 million. Work on the main shaft began in December and is expected to be completed by mid-1978. The service shaft was down approximately 700 feet at year end. Commercial production is scheduled for 1981. None of the reserves at Mt. Taylor have been sold according to Gulf's 1975 Annual Report.

CVX 00679

Plans to develop the smaller and shallower uranium reserves at Mariano Lake have been filed with the U. S. Department of Interior. Shaft sinking is scheduled for this summer and production is expected in 1977.

According to Bill Armstrong, the Navajo Tribe will not offer any reservation acreage for bid until the Exxon proposal is settled. Exxon must prepare an environmental impact statement which is not expected to be completed before fall. Therefore, it is unlikely that areas such as Cameron, Monument Valley, and Navajo Mountain will be offered to industry before spring of 1977.

Reserve Oil and Minerals is in the process of rehabilitating the incline at the old Poison Canyon Mine north of Grants. They hope to be able to put this property back into production in the near future.

Several research projects concerning uranium have been carried out at the University of New Mexico according to Dr. Douglas Brookins. One project was designed to investigate the apparent association of chlorite and/or illite with uranium mineralization. Humic acid is known to have a pronounced effect on the dissolution and precipitation of clay minerals, and since the close association of organic matter with uranium in the Grants mineral belt has long been recognized, the clay minerals may be useful in tracing the passage of the uraniferous organic acids. Analyses for uranium on whole rocks and on individual minerals was carried out at the Los Alamos Scientific Laboratories.

Project NURE (National Uranium Resources Evaluation) funded by ERDA calls for sampling the entire contiguous 48 United States and Alaska on a one sample per ten kilometer grid. A pilot study has been conducted at UNM to firmly establish sampling criteria in both an economic area (Grants Mineral Belt) and in a barren or subeconomic area (Estancia Basin). Approximately 5,500 samples have been collected from these two areas at a cost of \$70,000 during 1975. The sampling density is 1 per 1.4 square kilometers and should be sufficient to establish the quantity and nature of larger samples for Project NURE.

An effort is being made to determine the extent of alkali and alkaline earth element retention and migration and migration at the Oklo Uranium Mine in Gabon. The Oklo deposit is a natural fossil nuclear reactor which formed about 1.8 billion years ago. The objective is to place quantitative limits on elemental migration as one model for disposal of radioactive wastes from nuclear reactors. Initial work has verified retention of fission produced Rb, Sr, Cs, and Ba at this site for at least 30 million years.

Under an agreement approved early last month by a federal district court, Westinghouse Electric Corporation will distribute to 13 utilities the 15 million pounds of uranium it has on hand. The agreement, utility sources said, will assure the utilities of enough fuel for operation in 1976 at least. The agreement also calls for formation of a utility committee to meet with Westinghouse to look for "applicable resolution" of the larger question of what to do about the remaining 65 million pounds that Westinghouse says it has no assured supplies for and does not intend to deliver at the agreed prices.



which were as low as \$8/lb in some cases. The agreement has no effect on remaining suits dealing with the 65 million pounds. Westinghouse chairman Robert Kirby said Westinghouse could be forced to pay as much as \$40/lb for uranium it would sell at an average of \$9.50/lb. If it had to deliver the 65 million pounds in this "worse-case" situation, the loss could amount to some \$1.9 billion over the next 20 years. (Nuclear New - March 1976).

R. V. Gypert

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

Carl H. Smith

CVX 00681

Salt Lake City, Utah  
March 4, 1976

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/ROBERT D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - FEBRUARY, 1976

MINERALS EXPLORATION	
MAR 8 '76	
R. P. BLANC	<i>[Signature]</i>
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	<i>[Signature]</i>
L. C. ROVE	
J. T. WILLIAMS	
FILE	

I. DRILLING SUMMARY

MONTHLY DRILLING  
JANUARY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Thunderbird	12	7,880	12			Drilling statistics not received in time for Jan. Mo. Report
Total		12	7,880	12			

MONTHLY DRILLING  
FEBRUARY, 1976

No February drilling reported as of this date.

\* Mineralized hole = G.T. < .20% U<sub>3</sub>O<sub>8</sub> Min. 4' of .05%  
\*\* POI = G.T. of .60% Minimum 6' of .10% (underground)  
POI = G.T. of .20% or >Minimum of 4' of .05%

1973 TO DATE DRILLING  
THROUGH JANUARY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
Colorado	Sterling	112	36,590	112	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	24	63,870	23	1	0	
New Mexico	Chico (La Ventana)	9	27,200	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	991	379,754	643	202	146	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	52	35,184	43	2	7	
Wyoming	Bridger	11	9,402	11	0	0	
Wyoming	Urania (Copper Mtn.)	5	2,411	5	0	0	
Total		1,383	702,101	928	252	206	

CVX 00682

## II. GENERAL

A Uranium Joint Venture Meeting was held on February 4 in Pioneer Nuclear's Albuquerque office. Those attending were:

	(Operator)	
<u>Getty Oil Company</u>	<u>Pioneer Nuclear</u>	<u>Texas Eastern Nuclear</u>
R. D. Cypert, Jr.	Ralph Stewart	Robert Arrington
W. M. Pennell	Stanley Gray	
I. C. Trimble, Jr.	Jesse Hampton	
	Bernard Rufus	
	Steve Trudeau	
	Ray Morley	
	Getty Eshbaugh	

Pioneer Nuclear Inc., Texas Eastern Nuclear Inc., and Getty Oil are joint venture partners in the following projects in New Mexico: the Ignacio Chavez Grant, the Mt. Taylor Claim Group, the Elda Claim Group and the El Dado Claim Group. The purpose of the meeting was to review results obtained from exploratory drilling on these lands during 1975, to review the costs accountable to the Joint Venture from this exploration and to present a budget and to outline a program for 1976.

Pioneer Nuclear's final recommendations for 1976 exploration drilling will be submitted during March. No expenditures were approved during the meeting.

### Exploration Models

The following uranium exploration models were prepared and submitted to the District Exploration Manager for review:

1. Sandstone-Uranium
2. Metamorphosed-Uranium
3. Breccia Pipe-Uranium
4. Calcrete-Uranium
5. Contact-Uranium

### Land Acquisition (Utah)

On February 23, 1976, Mr. Carl Burley began staking claims on the north flank of the Salt Valley anticline. (Approximately six sections of land remain open for staking). This land is being taken to consolidate our land position on this prospect.

### Land Acquisition (Colorado)

On or before March 8, 1976, Mr. Steve Kosanke (Contractor) will begin staking lode claims in Moffat County, Colorado. Plans are to stake approximately 1400 lode claims if the land remains available. An attempt will be made to lease the fee land within the claim block area. This total land block will contain 30,000 plus acres.

This new area will be designated as the Great Divide Project and is located on the east flank or foreland portion of the Sand Wash Basin. The area of interest is approximately 22 miles southeast of our uranium discovery in the Washakie Basin.

Colorado (Dolores Anticline and Huerfano Basin Projects)

We have received a drilling bid from ESI Drilling Company with an average cost of \$5/ft. for a 2500-foot hole on the Dolores Anticline prospect and \$4/ft. for a 1500-foot hole on the Huerfano Basin prospect.

III. SCOUTING

Arizona

Kerr-McGee recently became interested in Lake Pleasant Regional Park located about 40 miles north of Phoenix, Arizona. Their interest stems from new surface discoveries of uranium mineralization in Tertiary lake beds that are locally opalized. State and Federal Park Departments have granted the Company exploration permits. Conflicting reports indicate that drilling activity is underway in the area. They have been active in the area for about one month.

Geomet Mining and Exploration Company, Boulder, Colorado, are reported actively working in the Black Butte area, Sections 13 and 14, T.6N., R.8W., Maricopa County. They have been there for about the last month. While most of their work has consisted of ground and airborne radon gas detection, other work has been conducted using airborne methods. They have also been reported doing similar work around Artillery Peak, Mohave County, around the Anderson Mine, Yavapai County, and in the vicinity of Salome, Yuma County.

Exploration drilling is continuing at and near the Anderson Mine. Union Oil Company is reported to be drilling to depths between 1000-1300 feet; Urangesellschaft is drilling to depths of 3,000-3,800 feet. Some mineralization is being encountered even at the greater depths.

Exxon is drilling the Tonto-Roosevelt Lake Basin area in Gila County. In addition to drilling, they have staked some additional surrounding areas. The number of holes drilled, depths of drilling, and number of new claims could not be ascertained.

Unconfirmed rumors have it that R.M.E.C. may have staked claims near Pierce, Cochise County. Kerr-McGee, also working in west-central Cochise County, may have also staked some new areas. Perhaps as many as 400 claims have been located in recent weeks.

New Mexico

It has been reported that United Nuclear's and Kerr-McGee's Church Rock ore bodies have been upgraded from 71,000,000 pounds of  $U_3O_8$  reserves to 80,000,000 pounds of reserves. It is not known which company increased their reserves by the larger amount.

New Mexico produced 9.9 million pounds of yellow cake in 1975 (from New Mexico Newsletter Feb. 1976).

United Nuclear is preparing to break ground for their new uranium mill at Northeast Church Rock. The mill will be located in the northeast corner of T.16N., R.16W.

Approximately 53 exploration and development rigs were operating in the Grants-Church Rock area during February, 1976.

Utah

It has been reported that Gulf Oil Corporation is opening a uranium exploration office in Salt Lake City. The office is to be activated on March 1, 1976, with six geologists.

Lisbon Valley, Utah

According to Mr. Steve Kosanke, geologist and La Sal, Utah, resident, Exxon has completed their current phase of drilling on their Gulf farmout properties on the south end of the anticline.

Near La Sal, Utah, there are several rigs exploring the Salt Wash Member of the Morrison. Atlas has recently opened a Morrison mine near La Sal. Mr. Will Holloway, formerly with Rio Algom, is mine geologist.

Washington

St. Joe Minerals Corporation has recently established a branch exploration office in Spokane, Washington. A significant portion of their work effort will be directed toward uranium exploration.

Mr. Richard Walters, Regional Manager, has indicated that St. Joe is searching for acquisition of sandstone uranium reserves. They also have a "grass roots" uranium exploration effort in Washington, Idaho and Montana, as well as in Alaska. They have plans of extending their uranium search into other western states.

R.D. Cepert Jr.

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

CH Smith

CVX 00685

Salt Lake City, Utah  
February 9, 1976

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/ROBERT D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - JANUARY, 1976  
URANIUM EXPLORATION

MINERALS EXPLORATION	
FEB 12 '76	
R. P. BLANC	1882
S. MUESSIG	125
D. A. NICHOLS	125
W. M. PENNELL	125
L. C. ROVE	125
J. T. WILLIAMS	125
FILE	

I. ADMINISTRATIVE

Mr. David L. Gillett, Administrative Assistant, will replace Mr. James R. Hawkins who will return to the operation at the Shirley Basin in Wyoming.

II. DRILLING SUMMARY

No drilling during January, 1976.

1973 TO DATE DRILLING  
THROUGH JANUARY, 1976

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
Colorado	Sterling	112	36,590	112	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	24	63,870	23	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	797	371,874	631	202	146	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Wyoming	Bridger	11	9,402	11	0	0	
Total		1,367	692,672	912	252	206	

CVX 00686

### III. GENERAL

Revision of the geologic reports on the Dolores Anticline, Salt Valley Prospect, Huerfano Basin and La Ventana Project was completed and six copies of each report forwarded to Los Angeles.

Messrs. C. H. Smith and K. Rank of the Salt Lake office spent one day (January 15) in the Los Angeles office. Rocky Mountain Energy Corporation, Union Pacific, Union Oil Company, and Mono Power Company geologists discussed the geology of ore deposits at Snakomund, South West Africa, Yeelirrie, Western Australia, and Jabiluka. The discussions ended with speculations on the origins of these and other Precambrian shield area uranium deposits.

Letters to obtain bids to drill the Dolores Anticline, Huerfano Basin and La Ventana properties were sent out during the month.

Dr. S. Muessig and Mr. R. P. Blanc were in the Salt Lake City office on January 22 and 23 reviewing the U. S. Minerals exploration programs.

Reports and drill hole locations maps of the 1975 uranium exploration projects have been prepared for the Company Tax Department

### IV. SCOUTING

#### Canada

Inexco Oil Company, Uranerzbergbau GmbH & Co., and Saskatchewan Mining Development Corporation have announced economic uranium mineralization at their Key Lake property, 150 miles north of La Ronge in northern Saskatchewan. Uranerz, the operator, has drilled 31 holes so far; 10 holes indicate mineralization averaging 0.7%  $U_3O_8$ . The mineralized zone is 690 feet long by 100 feet wide, but the ore body appears to be between 50 and 100 feet thick. Low grade ore surrounds the higher grade mineralization. Drilling is continuing on the property. The property is owned equally by the three companies (Mining Magazine, Dec. 1975, p. 489).

#### Colorado

Western Nuclear is drilling a hole immediately west of the Schwartzwalder mine. They are planning to bottom the hole at 2500 feet. They are also using water, rock and stream sediment sampling techniques in the immediate area of the mine. They have an option on a portion of Reserve Oil and Mineral's Front Range properties.

Reserve Oil and Minerals Corporation is attempting to develop an area of mineralization underground in their Aubrey Ladwig property near the Schwartzwalder mine. Several hundred tons of the ore have recently been produced with grades between 0.20-0.25%  $U_3O_8$ . Some mine car loads have assayed up to 1.0%  $U_3O_8$ . ROMCO is hopeful of maintaining production of 200 tons per month within the next several months.

CVX 00687

Phillips Petroleum drilled about 20 holes through the Salt Wash Member of the Morrison last fall on their Dolores Anticline properties, according to their driller. Although it was originally thought that Phillips was interested in the Moss Back Member of the Chinle, their primary interest was the Morrison. The Slick Rock District at the north end of the Dolores anticline has produced about 12 million pounds of  $U_3O_8$  from numerous Salt Wash mines. Our Dolores anticline properties also have a potential for a discovery in the Salt Wash.

#### New Mexico

The new uranium ore discovery by Phillips Petroleum Company is located in Sec. 31, T19N-R11W and Sec. 36, T19N-R12W, approximately 12 miles northeast of Crown Point, New Mexico. The 25 million pounds of  $U_3O_8$  ore reserves announced by Phillips are based on 213 holes drilled within an area containing 1900 acres. One hundred three of the holes intersected mineralized zones averaging better than 16 feet in thickness. (The above data published in the Albuquerque Journal on Dec. 17, 1975).

Following is a rig count of drilling activities in the Ambrosia, Church Rock and Crown Point uranium districts during January, 1976:

<u>Company</u>	<u>No. of Drill Rigs</u>	<u>Area</u>
Conoco	4	Crown Point
Conoco	3	Manta Grant
Phillips Petroleum	7	NE Crown Point
Teton Exploration	6	Dalton Pass
Teton Exploration	2	SW Standing Rock
Mobil-TVA	4	NW Crown Point
Homestake	1	Ambrosia Lake
Gulf	2	West Largo (West Ranch)
Gulf	2	Mt. Taylor
Exxon	2	North of Gallup
Utah International	2	Bargé Pass
Pioneer Nuclear	<u>2</u>	? ?
Total	37	

Mobil recently let a 400-hole program (depths 2300-2500 feet) in the Crown Point district.

#### Present Land Status

No land is available adjoining or near the new Phillips Seven Lakes uranium discovery other than land located on trend owned by the Santa Fe Railroad.

The Santa Fe Railroad has been contacted expressing our desire in acquiring an interest covering the Santa Fe minerals on trend of the Phillips discovery. We have been advised by the Railroad that they are presently evaluating their mineral exploration and leasing policies and that until final management decisions are made, the lands are not available.

CVX 00688



Washington

Urania Exploration, Inc.

Floyd Johnson, the Belt Series Project Geologist, reports that the Midnight mine will close on or around July 15, 1976. This information came to Mr. Johnson from Dr. Thomas Nash of the U.S.G.S. Dr. Nash believes the mine's closure is premature with respect to reserves; the mine's management has apparently failed in their long-range mine planning.

The mine's production (to July 15) is estimated to be around 8 MM pounds  $U_3O_8$  with an average grade of 0.22%. Other uranium mineralization Midnight Mines controls immediately outside the mine area may contain up to 5 MM pounds  $U_3O_8$  with an average of 0.08%. This mineralization is located along a zone 1.5 miles long. Midnight will "moth-ball" their 440 t.p.d. mill until uranium oxide reaches to within the \$50-\$80 price range.

Wyoming

The following was taken from the Billings Gazette:

"THE BILLINGS GAZETTE Tuesday, Dec. 23, 1975

Energy firm plans uranium mine, mill, Denver (AP) -  
The Rocky Mountain Energy Co. on Monday announced plans for a multi-million dollar uranium mine and mill complex at Bear Creek about 65 miles northeast of Casper, Wyo.

James Wilson, president of the wholly-owned subsidiary of the Union Pacific Corp., said his firm and the Mono Power Co. would be equal partners in the project, with Rocky Mountain Energy as operator of the plant.

Mono Power is a subsidiary of Southern California Edison Co. Wilson said Southern California Edison and San Diego Gas and Electric Co. would contract for the mill's production."

It has been reported that Urangesellschaft USA Inc. had purchased Minerals Engineering Company's 50 percent interest in uranium reserves in the Baggs Uranium District, Wyoming. Minerals Engineering will receive \$3 per pound for all the  $U_3O_8$  produced from its former interest.

The renewed interest in the Baggs area and its possible affect on our proposed Sand Wash-Great Divide, Colorado, uranium project should be considered.

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

R.D. Gypert Jr.

E. H. Smith

CVX 00689

Salt Lake City, Utah  
January 15, 1976

MINERALS DEPARTMENT	
JAN 21 '76	
R. P. BLANC	<i>[initials]</i>
C. J. KUNDERT	
S. MOESSIG	<i>[initials]</i>
D. A. NICHOLS	
K. REIM	<i>[initials]</i>
J. T. WILLIAMS	
FILE	<i>[initials]</i>

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/ROBERT D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - DECEMBER, 1975  
URANIUM EXPLORATION

I. DRILLING SUMMARY

MONTHLY DRILLING  
DECEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
New Mexico	Ignacio Chavez	4	8,880	4	0	0	Holes IC 22 thru IC 25
Total		4	8,880	4	0	0	

\* Mineralized hole = G.T. of .20% Min. 4' of .05%

\*\* POI = G.T. of .60% Min. 6' of .10% (underground)

POI = G.T. of .20% Min. 4' of .05% (open pit)

1973 TO DATE DRILLING  
THROUGH DECEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
Colorado	Sterling	112	36,590	112	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	24	63,870	23	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	797	371,874	631	202	146	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Wyoming	Bridger	11	9,402	11	0	0	
Total		1,367	692,672	912	252	206	

CVX 00690

## II. OPERATIONS

### COLORADO

The geological evaluation report of the Sand Wash Basin-Great Divide (Colorado)-Baggs (Wyoming) areas has been completed and submitted to Management for review approval.

A preliminary land check of the area recommended for acquisition in the report indicates that the immediate area of interest has not been drilled for uranium and is open for leasing and staking of lode claims.

Electrical surveys from oil well tests previously drilled in the area of interest indicate that thick, permeable sands are definitely present in the area recommended for acquisition.

### NEW MEXICO

#### Ignacio Chavez Joint Venture, McKinley & Sandoval Counties

Holes IC 22 through IC 25 were drilled in the project area during December. The gamma ray log indicated that no favorable mineralization was encountered in any of the holes.

A Joint Venture meeting with Pioneer Nuclear has been tentatively set for the week of January 25.

## III. GENERAL

Revision of the geologic reports on the Dolores Anticline, Huerfano Basin, Salt Valley Anticline and La Ventana areas has been completed and submitted to Management for review.

Our annual technical and Management meeting of the Crystalline Rockies and Belt Series Joint Venture projects was held in Golden, Colorado, on December 2. Messrs. C. H. Smith and K. Rank represented Getty Oil Company; other members present at the meeting included Marcel Tabouret (Mokta), Eberhard Muller-Kahle, Franz Dahlkamp, William Carlson (Uranerz) and C. S. Ferris (Urania).

Inexco is attempting to sell their 50 percent interest in the "Charlie" ore body. This ore body is in the Powder River Basin of Wyoming located some eight miles west of the North Butte ore body. They estimate the reserves at 6.4 million pounds (100%). The ore is apparently in the western extension of the B sand.

Following is a breakdown by project of the Uranium Department's 1975 drilling programs:

<u>State</u>	<u>Project</u>	<u>No.</u> <u>Drill Holes</u>	<u>Avg. Depth</u>	<u>Footage</u>
Colorado	Sterling	112	326'	36,590'
New Mexico	La Ventana	6	2933'	17,600'
Wyoming	Washakie Basin	43	621'	26,700'
Colo.-Wyo.-Ut.	Bridger	<u>11</u>	<u>855'</u>	<u>9,400'</u>
Total		172	524'	90,200'

CVX 00691

IV. SCOUTING

Alaska

Research Associates of Alaska recently completed a uranium drilling project near Healy, Alaska.

Colorado

According to Mr. H. L. Reade, Jr., Resource Associates of Alaska farmed out their Huerfano Park prospect to Cominco. Presently they are doing geologic field work and claim staking near Gardner, Colorado. They expect to drill next spring.

General Electric is now paying approximately \$13.00 per contained pound of  $U_3O_8$  for ore delivered to their Naturita buying station. This is substantially higher than the price offered by Union Carbide. Atlas Corporation has increased their price to \$16.00 per pound.

Montana

Kerr-McGee has reserves of 5-10 million pounds  $U_3O_8$  on the north plunge of the Black Hills in the Inyon Kara Group. Average depth of the ore body is reported to be 1600 feet.

Utah

Anaconda is still drilling on wide centers on their properties north of Moab. This suggests that earlier rumors of a discovery may have been erroneous.

R.D. G. [Signature]

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

Approved [Signature]

CVX 00692

Salt Lake City, Utah  
December 11, 1975

MINERALS DEPARTMENT	
DEC 15 '75	
R. P. BLANC	<i>RPB</i>
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	<i>LR</i>
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: C. H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - NOVEMBER, 1975  
URANIUM EXPLORATION

I. DRILLING SUMMARY

MONTHLY DRILLING  
NOVEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
New Mexico	Ignacio Chavez	4	8,980	4	-	-	
Total		4	8,980	4			

\*Mineralized hole = G.T. of .20% Minimum 4' of .05%

\*\*POI = G.T. of 60% Minimum 6' of .10% (underground)

POI = G.T. of .20% or Minimum 4' of .05% (open pit)

1973 TO DATE DRILLING  
THROUGH NOVEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
Colorado	Sterling	112	36,590	112	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	20	54,990	19	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	979	371,874	631	202	146	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Wyoming	Bridger	11	9,402	11	0	0	
Total		1,363	683,792	908	252	206	

CVX 00693

## II. OPERATIONS

### COLORADO

#### Sand Wash Basin, Moffat County

Geological field reconnaissance work has been completed for the present time in portions of the Sand Wash Basin, Moffat County. Traces of uranium mineralization were detected in some of the outcrops and near-surface sands in Twps. 11 and 12 North, Rges. 93 and 94 West. A land check is presently underway to determine if the area is available for acquisition. An evaluation report is in progress and will be submitted with recommendations on completion of the land check.

### NEW MEXICO

#### Ignacio Chavez Joint Venture, Sandoval and McKinley Counties

The drill rig is broken down at a depth of 1400 feet on hole IC-22. Prior to this problem four holes, IC-18 through IC021, were completed on the eastern portion of the property during November. No uranium mineralization has been encountered in these holes. Most of the holes have penetrated artesian aquifers. They will be completed as water wells for the Bureau of Land Management.

### WYOMING

A meeting was held in Casper, Wyoming, on November 13 and 14, to discuss the 1976 budget and program for the Thunderbird Project and the Excluded areas. Messrs. C. H. Smith and Robert P. Barnes attended from Salt Lake City. The Production Department was represented by Mr. Ned Avery of Los Angeles.

## III. GENERAL

Mr. C. H. Smith met with Mr. R. L. Porter, a metallurgist in Salt Lake City to discuss in situ mine development of the Thunderbird Joint Venture ore reserves in Converse and Campbell Counties, Wyoming. A report summarizing the results of the meeting will be prepared, in association with Mr. Porter, and submitted in the near future.

The T.V.A. is presently operating 30 drill rigs in their uranium exploration program. Some of these rigs are tied into joint venture operations with other companies. One of their geologists indicated that they are planning to add six geologists to their staff and were looking for people with a minimum of five years experience in uranium exploration.

## IV. SCOUTING

### ARIZONA (Reported by W. Pennell)

The Anderson Mine property has recently been evaluated by Union Oil Company of California. Union has drilled over 50,000 feet of exploration drill

CVX 00694

holes in the area near the old mine workings. This drilling has led Union to believe that commercial production of the uranium ore is economically feasible at current uranium prices and their production department will soon operate the property.

Urangesellschaft has been drilling for more than two months at depths between 1500 and 2200 feet. Their drill pattern suggests they've intersected mineralization to the south of Union's exploration.

NEW MEXICO

Conoco continues to drill with eight rigs on the Barnabe Montana Grant in the Rio Puerco area. Near Crownpoint, Phillips (11 rigs) and Mobil (6 rigs) are drilling close-spaced holes. Anaconda reportedly intersected some mineralization in a Mt. Taylor hole located approximately two miles south of Gulf's Mt. Taylor deposit. Teton Exploration is drilling close-spaced holes in Sec. 14, T.17N., R.14W., on trend with, but three miles north of Getty Oil Company's eastern Church Rock properties.

*R.D. Cypher*

RDC,JR:alr

CC: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00695

Salt Lake City, Utah  
November 13, 1975

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - OCTOBER, 1975  
URANIUM EXPLORATION

MINERALS DIVISION
NOV 17 1975
R. P. BLANC
C. J. KENDER
G. J. KENDER
D. A. NICHOLS
K. M. BOIN
L. C. BOVE
J. V. WILLIAMS
FILE

# I. DRILLING SUMMARY

## MONTHLY DRILLING OCTOBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
New Mexico	Ignacio Chavez	5	15,210	5	-	-	
Wyoming	Bridger	5	4,685	5	-	-	
Wyoming	CCI-Thunderbird	31	14,400	23	7	1	6' of .12%
Total		41	34,295	33	7	1	

\*Mineralized hole = G.T. .20% minimum 4' .05%

\*\*POI = G.T. of .60% minimum 6' of .10% (underground)

POI = G.T. of .20% or minimum 4' of .05% (open pit)

## 1973 TO DATE DRILLING THROUGH OCTOBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	16	46,010	15	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Colorado	Sterling	112	36,590	112	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	979	371,874	631	202	146	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Wyoming	Bridger	11	9,402	11	0	0	
Total		1,359	674,712	904	252	206	

CVX 00696



## II. OPERATIONS

### NEW MEXICO

#### Ignacio Chavez Grant, McKinley & Sandoval Counties

In October, five holes were completed on the western portion of the Ignacio Chavez Joint Venture. Only one hole intersected any mineralization: Hole IC-14 encountered 2 feet of .01%  $eU_3O_8$  within the Recapture Creek Member of the Morrison at a depth of 2649 feet. Three holes, IC-7, IC-14 and an oil test by Northern Minerals (all of which have been drilled on the western one-third of the Grant) have encountered thin, low-grade material; however, anomalous radioactivity has been found in three different intervals within the Morrison sequence.

The drill rig has been moved to the eastern portion of the Grant. Six holes are scheduled to be drilled in this area and the first one (IC-18) is projected to be completed during the second week of November.

### WYOMING

#### Bridger Project, Sweetwater Co., Wyo. and Uintah Co., Utah

Drilling in the subject area has been shut down because of weather and ground conditions.

The drill program was often delayed by mechanical problems as well as slowed by intervals of extremely hard marlstone strata. As a result, several holes were deleted from the program. Nevertheless, with the holes we drilled together with oil well logs and outcrop observations should permit an appraisal of the potential of this area for the occurrence of uranium ore deposits. Eleven holes were drilled in the area for a total of 9402 feet.

Some of the sandy zones in the area contained slightly radioactive anomalies but none approaching ore grade mineralization.

#### Urania Exploration Inc.-J.V. GOC-SOC 33 1/3%

Urania has recently staked about 40 lode claims in the Sawatch region. The claims covered one radioactive base metal sheer zone and a leucocratic pegmatitic granite which contains uranium, thorium, columbium and tantalum. In addition, about 100 samples have been collected. The anomalies are probably related to the Laramide orogeny.

## III. PROPERTY SUBMITTALS

Mr. Ken Rank investigated two submittals near the Lake George area (Colorado). One occurrence was a vein-like zone in granitic rock; the other was a small occurrence. No additional work is recommended for these properties.

## IV. GENERAL

Following is a breakdown of estimated costs for the uranium projects included in the Proposed 1976 (A-Plan) Program Expense Budget (estimates of GOC operated properties only).

CVX 00697

Project	Drilling Period	Est. Footage	No. Drill Rigs	Size Rigs	Cost/ft.
Washakie Basin, Wyo.	4 mos.	20,000	1	1500	\$3.00
Bridger Project, Utah- Wyo.-Colo.	6 mos.	35,000	1	1500	3.50
La Ventana, New Mexico	4 mos.	20,000	2	4000	7.50
Huerfano Basin, Colo.	2 mos.	8,000	1	1500	5.00
Dolores, Colo.	2 mos.	7,000	1	3000	6.00
Unallocated	5 mos.	20,000	1	1500	4.00
Total		110,000	7		\$4.47/ft. avg.

Since there is a shortage of rigs, we plan on submitting drilling bids for the above footage in the near future.

++++

Messrs. William Pennell and Kenneth Rank attended three days of technical meetings in Golden, Colorado. These meetings attempted to outline our present state of knowledge concerning known uranium and gold-bearing quartz, pegmatite conglomerates in the world with such reference to deposits in South Africa, Brazil and Canada new areas for exploration were suggested. Not surprisingly, the only suspected U. S. equivalent of these deposits may eventually be found south of the Blind River deposits in the Great Lakes Region. Other areas of likely potential will include regions where Precambrian banded iron formations are found.

++++

Geological field work is presently underway in the Sand Wash Basin area of Colorado. Most of the work is confined to the east side and outside of the Oil Shale Withdrawal area. The work will also overlap into the eastern flank of the Washakie Basin.

Outcrops of Browns Park (Miocene), Bridger (upper Eocene) and Wasatch (lower Eocene) sediments are being examined. Over much of the area only the Wasatch formation is present. If weather permits, our plans include some recon work in the western portion of the Red Desert area (T. 23,24 N. - R. 97,98,99 & 100 W.) and portions of the Green River Basin near Farson, Wyoming (see attached map for general location of areas).

The field recon program consists of the following:

- I. Examination of Outcrops - to determine if the areas contain host rock with lithologic properties favorable for the localization of roll type uranium deposits.
  - a) Lithologic descriptions of the sediments
  - b) Examine the sands for alteration
  - c) Examine and determine the cementing material of the sands
  - d) Determine if pyrite is present or if any indication of decomposition of iron sulfides
  - e) Determine sand thickness where exposed
  - f) Strikes and dips will be taken to aid in determining any structural changes or configuration

II. Radiometric Survey + (Ground Survey) as much of the area as possible will be checked with a scintillation unit. Samples will be taken for chemical analysis where anomalies are indicated by the radiometric unit.

III. The surface will be checked for the following:

- a) Areas to be checked for claim post and ownership
- b) The areas checked for accessibility
- c) Areas to be checked for water availability

This evaluation is a continuation of our Bridger play which originated after our uranium discovery in the Washakie Basin. The program was initiated on November 3, 1975, and on completion a report with recommendations concerning the next phase will be submitted to Management for approval.

#### V. SCOUTING

The Tennessee Valley Authority (TVA) has six drill rigs operating near Edgemont, South Dakota. They are doing fill-in drilling along roll fronts in the Fall River and Lakota formations (Early Cretaceous). A TVA geologist reported that a few of their drill holes had penetrated mineralized zones up to 15 feet thick. Most of the mineralized horizons are much thinner and the trend of the ore is difficult to project. It was indicated that the mineralization is low grade (.10%  $U_3O_8$ ) and occurs at depths from near surface to 900 feet.

The TVA has recently acquired a farm-in with Mobil Oil Company on their Navajo Tract No. 60 property near Crown Point, New Mexico (T. 17 N. - R. 13 W, McKinley County). Mineralization in the area occurs at an approximate depth of 2200 feet below the surface.

Exxon, Ranchers Exploration, Anaconda and the TVA are presently the most active companies doing uranium exploration in the Moab, Utah, district. The source of this information indicated that no recent significant ore discoveries have been made in the area.

#### New Mexico

Conoco is presently drilling with nine rigs on their Bernabe Monano Grant (Laguna Indian Reservation Lease) in the Rio Puerco area. Known reserves are in the 8 MM pound range.

The attached chart and ore classification data were taken from a paper presented by D. L. Hetland at the E.R.D.A. Uranium Industry Seminar, October, 1975.

#### Probable

"Probable" potential resources are those estimated to occur in known uranium districts and are further postulated to be

- 1. in extensions of known deposits,
- 2. in new deposits within trends or areas of mineralization that have been identified by exploration

CVX 00699

Possible

"Possible" potential resources are those estimated to occur in new deposits in formations or geologic settings productive elsewhere

1. within the same geologic province or subprovince under similar geologic conditions,
2. within the same geologic province or subprovince under different geologic conditions.

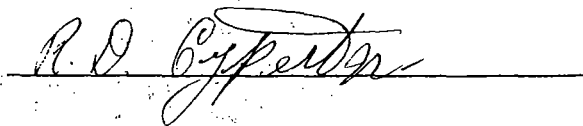
Speculative

"Speculative" potential resources are those estimated to occur in new deposits

1. in formations or geologic settings not previously productive within a productive geologic province or subprovince,
2. within a geologic province or subprovince not previously productive.

The term productive used in the definitions of possible and speculative potential resources is arbitrarily defined as more than 10 tons of  $U_3O_8$  in production and/or ore reserves.

The reliability of the estimates of potential uranium resources differs for each of the three potential classes. The definitions provide for the classification of potential resources based on a successively diminished knowledge of the uranium geology necessary for the estimation. The reliability of potential estimates is greatest for the probable class because of the greater knowledge base resulting from the advanced stage of exploration and development of uranium districts. It is least for speculative potential where no significant uranium deposits are known, but for which favorability is inferred from geologic literature, field reconnaissance, and other limited knowledge.

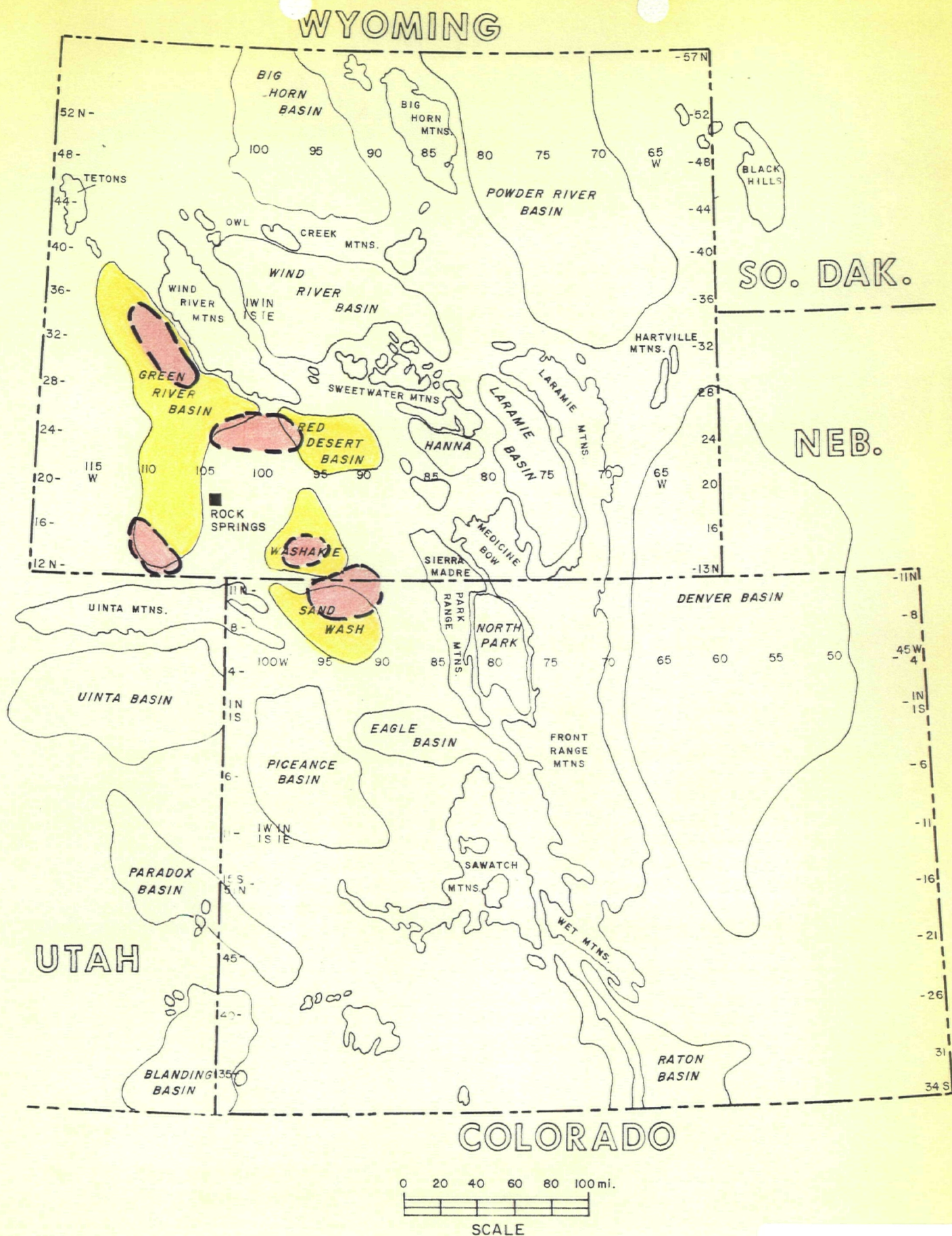


RDC,JR:alr  
Encls.

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00700





CVX 00701

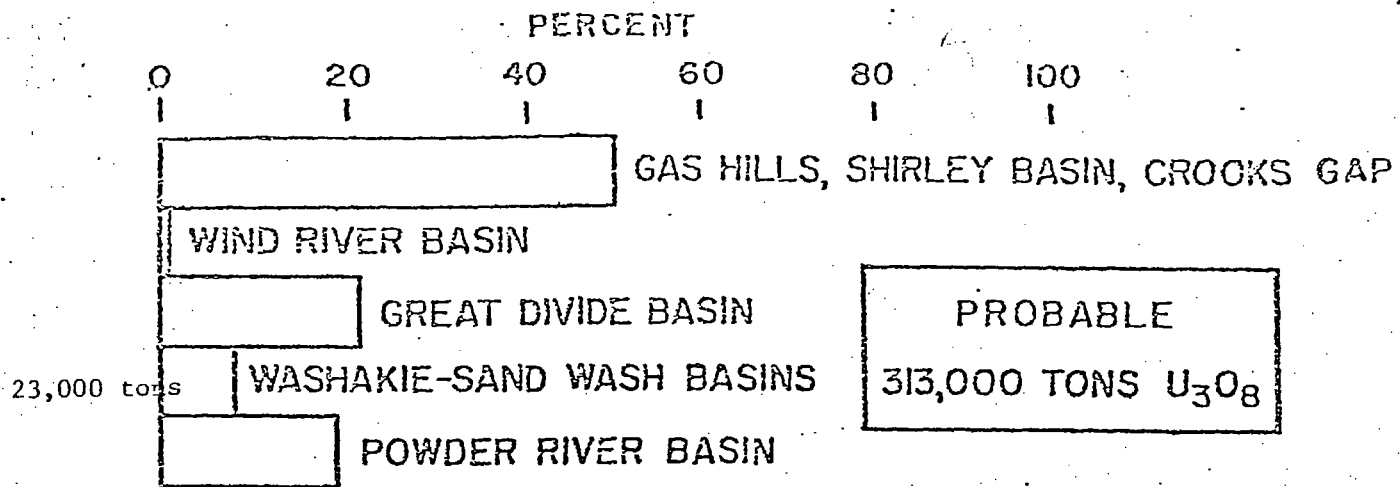


FIGURE 7  
DISTRIBUTION OF \$30 POTENTIAL URANIUM RESOURCES  
BY SUBPROVINCE FOR THE WYOMING BASINS

From D. L. Hetland paper on Potential Resources presented at E.R.D.A. Uranium Industry Seminar, Oct., 1975.

CVX 00702

Salt Lake City, Utah  
October 15, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - SEPTEMBER, 1975  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
OCT 20 '75	
R. P. BLANC	1852
C. J. KUNDERT	
S. MUSSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	WIP
J. T. WILLIAMS	
FILE	

# I. DRILLING SUMMARY

## MONTHLY DRILLING SEPTEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	Bridger	6	4,497	6	-	-	
Wyoming	CCI-Thunderbird	10	5,040	6	2	2	
Wyoming	CCI-Excluded	6	7,525	6	2	1	
Total		22	17,062	18	4	3	

\*Mineralized hole = G.T. < .20% minimum 4' of < .05%  
 \*\*POI = G.T. of .60% - minimum 6' of .10% (underground)  
 POI = G.T. of .20% or > minimum of 4' of .05%

## 1973 TO DATE DRILLING THROUGH SEPTEMBER, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Colorado	Sterling	112	36,590	112	0	0	
Wyoming	CCI-Excluded	112	71,325	32	30	53	
Wyoming	CCI-Thunderbird	948	357,474	608	195	145	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Wyoming	Bridger	6	4,497	6	0	0	
Total		1,318	640,197	871	245	205	

CVX 00703

## II. OPERATIONS

### ARIZONA

Tabulations are being made of the geochemical and radiometric data related to the breccia pipe soil sampling survey. Radiometrics from the project have been completely plotted and contoured. There appears to be no large and obvious radiometric anomalies. Laboratory work for trace amounts of copper is about 60 percent complete. Small copper anomalies exist in the project. These anomalies will be studied in greater detail during the next few weeks. A final report will follow upon completion of the geochemical analytical work.

### NEW MEXICO

Pioneer Nuclear began drilling on the Ignacio Chavez Joint Venture property on September 30, 1975. The original 13-hole program was scheduled to start at an earlier date, but was delayed because of rain.

### COLORADO-UTAH-WYOMING

#### Bridger Project

Four holes were drilled on the Bridger Project during September. One of the recon holes drilled in Sec. 14-T13N-R113W, No. 1, just north of Lonetree, Wyoming, penetrated a sequence of rocks that are stratigraphically higher than the claystone, siltstone and marlstones encountered previously. This hole encountered thick sequences of fluvial sandstones. Significantly, this hole had some above background count within one sandstone bed. Holes yet to be drilled will generally penetrate this same sequence of strata.

The fourth hole drilled during the month was located in Sec. 28-T13N-R113W (Sweetwater County, Wyoming). The hole was terminated in hard shales and marlstones at a depth of 750 feet. The upper part of the hole encountered favorable looking sands, but no significant mineralization. Drilling of the next hole will commence on October 3.

## III. SCOUTING

### New Mexico

Phillips Petroleum continues to drill on a northly-southerly trend in the central portion of the San Juan Basin. Drill locations are spaced on 500-foot centers and directional drilling is being employed to give multiple tests of the mineralized Westwater from one set-up. The drilling depths are known to be less than previously reported--in the 3250-foot range. This remains the furthest off-trend basinward mineralization known to be encountered.

### West Texas

AGIP (Italian National Company) has completed its first phase of drilling in the eastern Marfa Basin, Big Bend Area, Texas. Their optimism is not as high

CVX 00704



as it was a year ago for the clastic wedge target quickly interfingered to a predominantly lacustrine, siltstone unit as drilling proceeded westward. The Lower Pruett (Tertiary) sandstones do contain uranium mineralization on the outcrop and for a shallow distance down-dip. It is believed that the uranium in these occurrences was derived from the anomalously radioactive tuffs which overlie the sandstones, that it migrated along fractures and secondary permeability caused by fracturing associated with basin-margin faulting, and the uranium was deposited at a paleo-watertable.

Drilling on 200' centers will complete the evaluation of the shallow mineral sometime this year. Airborne magnetics are being contemplated to outline buried basement highs which may have comparable clastic wedges. The possible southward extension of these occurrences will be tested next year.

#### IV. GENERAL

A report concerning the Potential Uranium Ore Reserves in the Washakie Basin, Sweetwater County, Wyoming, has been completed and submitted to the District Exploration Manager.

+++++

Drs. Susan A. Longacre and Lawrence R. Baria, of the Houston Research Department, presented a clastic and carbonate sediments symposium to the Salt Lake City exploration group on September 25 and 26. The discussions consisted of structure, hydrodynamics and depositional environments of sedimentary rocks. The program was well organized, informative and appreciated by all attending.



+++++

Messrs. W. Pennell and R. Cypert are planning to attend the Uranium Industry Seminar to be held on Oct. 7 and 8 in Grand Junction, Colorado. This program has been presented by the Energy Research and Development Administration (A.E.C.) for the last few years.

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

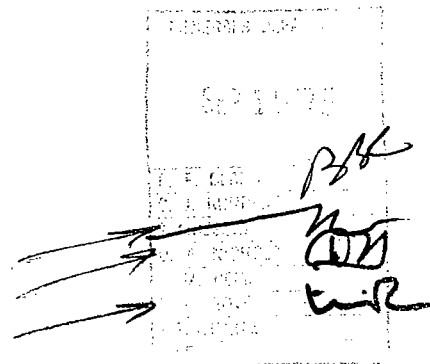
APPROVED

CVX 00705

Salt Lake City, Utah  
September 19, 1975

TO: MR. ROBERT P. BLANC  
FROM: C. H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - AUGUST, 1975  
URANIUM EXPLORATION



I. DRILLING SUMMARY

MONTHLY DRILLING  
AUGUST, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Thunderbird	14	7665	8	2	4	
Wyoming	Washakie Basin	18	9825	14	1	3	
Total		32	17,487	22	3	7	

\* Mineralized hole = G. T. <.20% minimum 4' of <.05%  
\*\* POI = G. T. of .60% - minimum 6' of .10% (underground)  
POI = G. T. of .20% or > minimum of 4' of .05%

1973 TO DATE DRILLING  
THROUGH AUGUST, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Colorado	Sterling	112	36,590	112	0	0	
Wyoming	CCI-Excluded	106	63,800	26	28	52	
Wyoming	CCI-Thunderbird	938	352,434	602	193	143	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	53	35,846	44	2	7	
Total		1,269	623,153	853	241	202	

CVX 00706

## II. OPERATIONS

### ARIZONA

Forty five square miles have been sampled for copper and radiometrics south of the Orphan Lode district. No additional sampling is planned until results of the analysis are received.

### COLORADO

#### Weld County Project

The Land Department is presently negotiating a farmout of the Weld County, Colorado, ore bodies. Negotiations are in progress with Powerco (backed by Westinghouse Corporation) for the Wildhorse Creek and Grover ore bodies. Triad Corporation of Nevada, Inc., with the financial backing and performance guarantee of an eastern utility, Rochester Gas and Electric, is negotiating for the Pawnee Buttes ore body.

### WYOMING

#### Bridger Play

Approximately 18,000 acres of state leases have been obtained in several townships in the Greater Washakie and Green River Basins.

A 19-hole program has been laid out in the southwestern part of the Bridger (Green River) Basin. The drill holes are located on public domain. Each will be drilled to 1000 feet. The holes are all located outside of the oil shale withdrawal area. Two holes will twin oil well holes that appear to have anomalous radioactivity at depths less than 1000 feet. This program should indicate areas of favorable stratigraphy that can be claimed or leased. Drilling on this project will begin during the first week of September.

#### Washakie Basin, Sweetwater County

Four core holes were drilled offsetting two previously drilled mineralized holes. Core recovery was fair in the unmineralized interval (80%+), but was less than 30% in the mineralized zones. Assay results of these mineralized intervals have not been received as of this report date. (These core holes are offsets to the original discovery hole).

Following is a breakdown of the radiometric results of the mineralized interval encountered in the core holes. (est. subject to change).

<u>Sec.</u>	<u>Twp.</u>	<u>Rge.</u>	<u>Hole No.</u>	<u>Interval</u>	<u>Min.</u>	<u>Thk.</u>	<u>Grade</u>
36	15N	98W	C-1	468'-471'		3'	.08%
36	15N	98W	8C-1	497½'-502'		4.5'	.08%
36	15N	98W	8C-2	501'-502'		1'	.03%
36	15N	98W	1C-2	466'-470½'		4.5'	.11%

CVX 00707

GENERAL

Geologic reports and maps for the farmout proposal concerning properties in Colorado, New Mexico and Utah have been completed and submitted to the District Exploration Manager for distribution. The properties included in this proposal are as follows:

<u>State</u>	<u>Area</u>	<u>Gross Acres</u>
Colorado	Dolores Anticline	8180
"	Huerfano Basin	7600
New Mexico	La Ventana	9760
"	(Nuclear Corporation)	11,134
"	Chico	9768
Utah	Salt Valley (state leases)	<u>4345</u>
	Total	50,787 acres

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

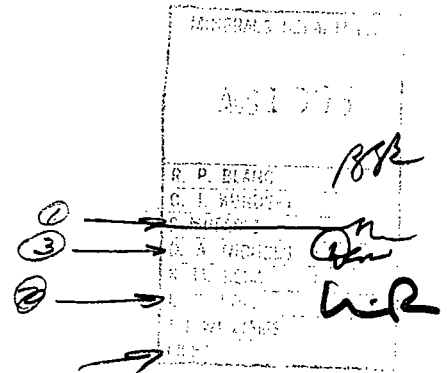
APPROVED

R. D. Cybert, Jr. / alr  
Carl H. Smith

CVX 00708

Salt Lake City, Utah  
August 11, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - JULY, 1975.  
URANIUM EXPLORATION



# I. DRILLING SUMMARY

## MONTHLY DRILLING JULY, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Thunderbird	9	5,640	7	2	-	
Wyoming	Washakie Basin	18	10,286	15	1	1	6' of .08 1.5' of .22
Total		27	15,926	22	3	1	

\* Mineralized hole = G. T. .20% (minimum 4' of .05%)  
\*\* POI = G.T. of .60% - minimum 6' of .10% (underground)  
POI = G.T. of >.20% - minimum of 4' of .20%

## 1973 TO DATE DRILLING THROUGH JULY, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
New Mexico	El Dado	2	8,644	2	0	0	
Colorado	Sterling	112	36,590	112	0	0	
Wyoming	CCI-Excluded	106	63,800	26	28	52	
Wyoming	CCI-Thunderbird	924	344,769	594	191	139	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	35	26,021	30	1	4	
Total		1,264	605,645	831	238	195	

CVX 00709

## II. OPERATIONS

### ARIZONA

A prospect (approximately 54 square miles) in Coconino County, Arizona, is presently being explored by geochemical and radiometric methods. The test area is in close proximity to the Orphan Lode which is located within the Grand Canyon National Park. The prospect, as originally outlined, is 25 percent complete.

### WYOMING

#### Washakie Basin, Sweetwater County

Drilling continued at a satisfactory rate in the Washakie Basin during July. Drilling was confined to offset holes to the original discovery hole in Sec. 36, T15N-R98W and to wide spaced holes in other state leases in the area.

One of the offset holes (Hole #8, Sec. 36, T15N-R98W) to the original discovery hole contained two zones of significant mineralization. The top of the mineralized zone occurs at a depth of 487 feet below the surface and correlates very well with the mineralized interval in Hole No. 1. One hole, drilled in the center of the section, encountered one mineralized horizon at 213'. Although not of ore grade, this was the first hole to encounter mineralization in a recognizably altered sand this high in the stratigraphic section. Another hole drilled two miles east and one mile north of the close-spaced drilling, intersected both mineralized horizons. The remaining wide spaced holes drilled during the month contained no favorable mineralization.

At this time, 7 of the 25 holes drilled during the 1975 program have been mineralized with uranium anomalies in excess of 1' of .01 eU<sub>3</sub>O<sub>8</sub>. These holes lie in three unconnected sections in a 4-mile by 2-mile area. (Please refer to enclosed map for drill hole locations).

## III. SCOUTING

### UTAH

It is reported that Exxon and Anaconda have made uranium discoveries near Moab, Utah. Of the two, Anaconda's is perhaps the more significant. Their discovery is located just east of the Seven Mile District on the downthrown side of the Moab fault. The geologic setting is similar to that of the Rio Algom ore deposit. That is, it is an extension of an ore trend initially developed on the upthrown side of the faulted nose of an anticline.

Exxon's discovery is in an area called Arts Pasture adjacent to the road to Canyonland National Park. They have embarked on a 900-hole delineation drilling

CVX 00710

program. This suggests they are chasing channel sandstone deposits similar to those seen at Mineral Canyon to the west. The size of the delineation drilling program would indicate they may anticipate problems with the size and continuity of the ore pods.

R. D. Gifford

RDC,JR:alr

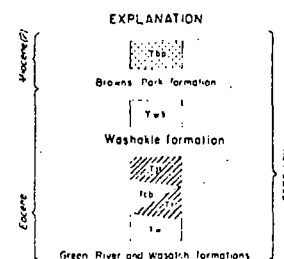
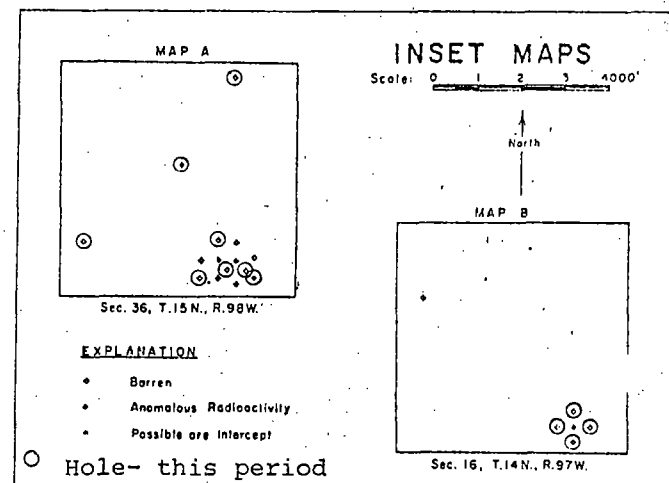
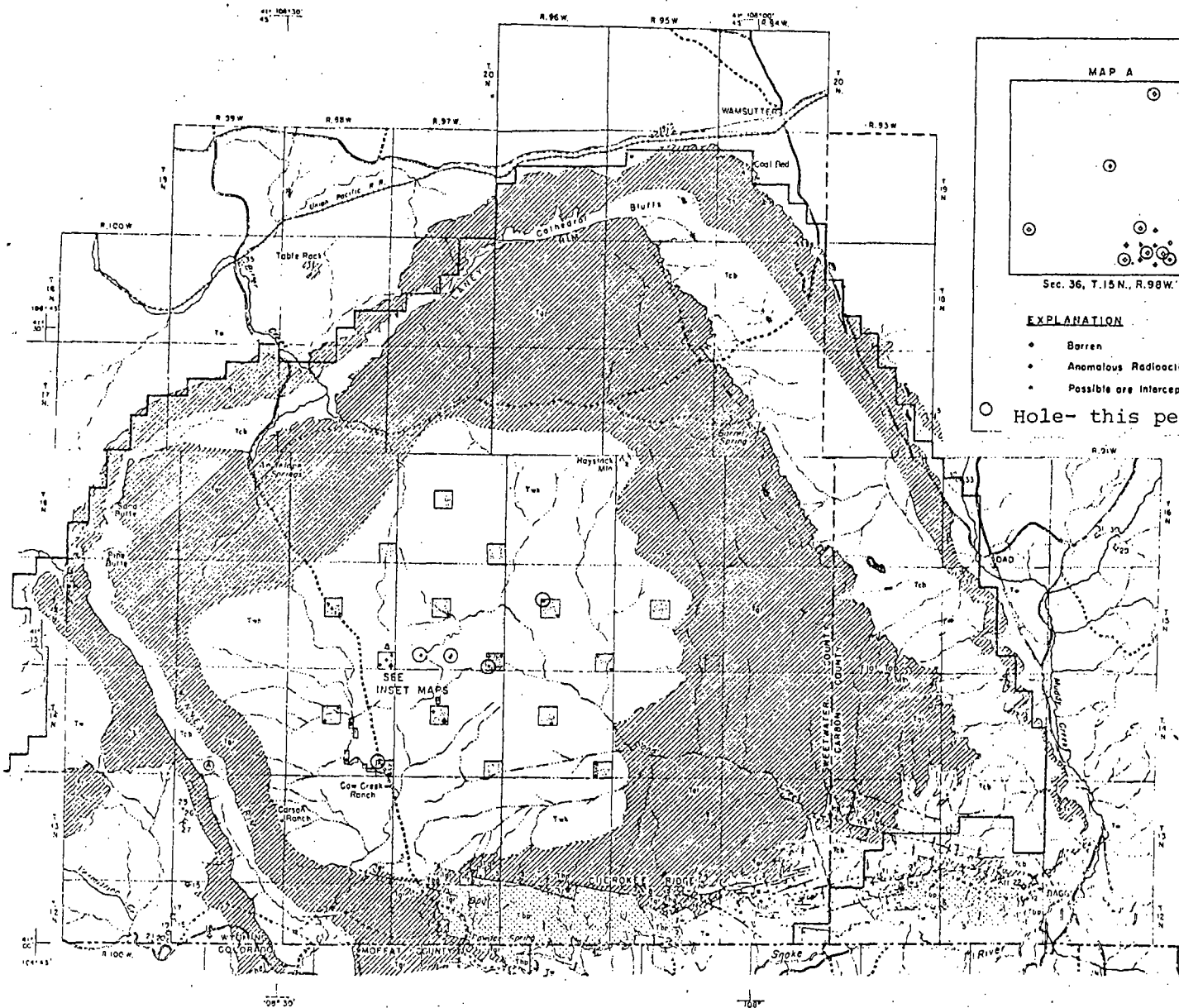
Attach.

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

Carl H. Smith

CVX 00711



○ Hole completed this period

SCALE 0 2 4 6 8 Miles

# WASHAKIE BASIN PROJECT Sweetwater County, Wyoming

Date: July, 1975

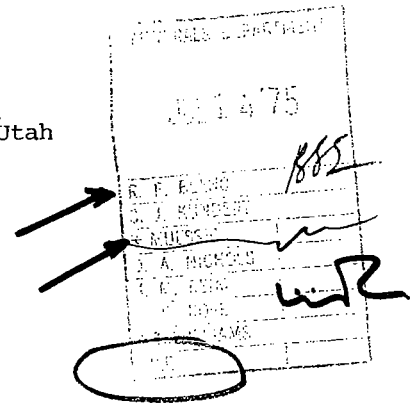
*W. J. Penner*  
8/12/75

CVX 00712



*→ Let's report this full page  
project - not several weeks -*

Salt Lake City, Utah  
July 8, 1975



TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - JUNE, 1975  
URANIUM EXPLORATION

I. DRILLING SUMMARY

MONTHLY DRILLING  
JUNE, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
ew Mexico	El Dado	2	8,644	2	0	0	
yoming	Washakie Basin	7	6,595	5	0	2	
yoming	Thunderbird-CCI	4	1,900	4	0	0	
Total		13	17,139	11	0	2	

\* Mineralized hole = G.T. .20% minimum 4' of .05%

\*\* POI = G.T. of .60% - minimum 6' of .10% (underground)

POI = G.T. of .20% or minimum of 4' of .05% open pit

1973 TO DATE DRILLING  
THROUGH JUNE, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
izona	Artillery Peak	7	2,855	7	0	0	
ew Mexico	Church Rock	3	8,100	2	1	0	
ew Mexico	Ignacio Chavez	11	30,800	10	1	0	
ew Mexico	Chico (La Ventana)	9	27,300	9	0	0	
ew Mexico	El Dado	2	8,644	2	0	0	
olorado	Sterling	112	36,590	112	0	0	
yoming	CCI-Excluded	106	63,800	26	28	52	
yoming	CCI-Thunderbird	915	339,129	587	189	139	
yoming	Poison Spider	50	51,713	34	16	0	
yoming	Pine Mountain	5	5,053	5	0	0	
yoming	Washakie Basin	17	15,735	14	0	3	
Total		1237	589,719	808	235	194	

CVX 00713

## II. OPERATIONS

### ARIZONA

*Amplify*

On June 25, a soil sampling program began in the vicinity of the uranium-bearing Orphan Lode breccia pipe. The purpose is to explore geochemically and radiometrically a 50-square mile region south of Grand Canyon Village for similar mineralized breccia pipe structures. The project will take about eight weeks to complete.

### COLORADO (Reported by K. Rank)

#### Dolores Anticline Project, Dolores County

Four hundred and eighteen claims have been located in San Juan Forest, Dolores County, Colorado. Located as the SJ Claims Group, by Mr. Steve Kosanke, Contractor, these claims are the only claim locations in the immediate area. Numerous logging, cattle and general access roads provide excellent survey control and relatively easy staking conditions. The nearest and most recent claim staking activity in the Slick Rock Mining District was completed by Phillips Petroleum Corporation in May. Their claims are located in Sections 1-18, 21-23, T41N, R16W; Sections 1 and 12, T41N, R17W and in Sections 29-35, T42N, R16W. Cornering of the SJ Claim Group is about 90 percent complete. The location notices were recorded during the latter part of June in Dove Creek, county seat for Dolores County, Colorado.

North American Uranium has about 14,500 acres of claims centered on the northern block recommended for acquisition. They drilled two deep holes; they encountered sands but no radioactivity in the Moss Back member of the Chinle. They are naxious to sell their entire land holdings which include some small producing properties in the Morrison formation. However, they would consider an offer on the deep rights. They were approached previously by Anaconda but could not reach an agreement. North American Uranium is controlled by Canadian Hydrocarbons, Ltd., Great Basins Petroleum and Houston Oil and Gas.

#### Huerfano Area ( Reported by R. P. Barnes)

An investigation of the courthouse records indicates this land is presently open. The surface fee is in large part owned by some of the principals of Forrest Oil of Denver. Nuclear Dynamics staked claims in the area and filed assessment work for two years. According to their exploration manager in Casper, they drilled "a half dozen" holes there in a joint venture with Conoco and encountered some mineralization. They are agreeable to trading these data. We have mailed them a trade map and are awaiting a reply.

#### Sterling Project Area

The evaluation report of the 1975 drilling program for the project area has been completed and submitted to Company Management for review. The recommendations submitted in the evaluation report are as follows:

1. That the Sterling Project Area be signed off.
2. That all of our Federal, State and Fee leases that are located in Twps. 9, 10 and 11 North, Rge. 57 West, extending eastward into

CVX 00714

Twps. 11 and 12 North, Rge. 46 West, be dropped and that no additional rental payments be made. The total acreage recommended to be relinquished is 49,320 acres.

NEW MEXICO (Reported by W. M. Pennell)  
El Dado Joint Venture, McKinley County

Texas Eastern & Pioneer Nuclear, as part of earning their two-thirds joint interest drilled two holes for a total of 8,644 feet on Getty Oil Company's El Dado claims on Mt. Taylor. The gamma ray logs from these holes indicated that no favorable uranium mineralization was encountered. At present, no additional drilling is planned for the area this year.

UTAH

Robert Barnes spent three days in southern Utah examining a prospect submittal near Hanksville. This prospect consists of a thick sequence of Salt Wash member sandstones in a closed structural low. This prospect lies astride the northern distributary channel system of the Morrison formation.

WYOMING

Shirley Basin, Carbon County

Assessment drilling on the unpatented lode claims in the Shirley Basin was completed on June 13. This drilling fulfills the work requirements on these claims for the 1974-75 assessment period.

Washakie Basin Project, Sweetwater County

On completion of the Shirley Basin Project, the rig was moved to the Washakie Basin Project. The first hole (located in the SE corner of Sec. 16, T14N-R97W) was started on June 18 and completed on the 19th. Uranium mineralization was encountered at a depth of 325 feet below the surface. The gamma ray log indicated a peak grade of .037% eU<sub>3</sub>O<sub>8</sub>. This hole will be offset and the area explored for additional and stronger mineralization during the latter part of July. A second hole was drilled in the northwest corner of the section, but no favorable mineralization was encountered.

Five offset holes to the original discovery hole located in Sec. 36, T15N-R98W were drilled. These holes were drilled on a rectangular grid system on 400-foot centers. The following results were obtained from these holes:

<u>Location</u>	<u>Hole No.</u>	<u>Distance Offset From Discovery Hole</u>	<u>Mineral Char.</u>
36-15N-98W	2	400' N.	Trace of min.
36-15N-98W	3	400' S.	Barren
36-15N-98W	4	400' W.	@ 460' - 4.5' of .09% eU <sub>3</sub> O <sub>8</sub>
36-15N-98W	5	400' E.	Barren
36-15N-98W	6	800' W.	Barren

CVX 00715

### III. SCOUTING

A reliable source has indicated that Western Nuclear has discovered what is believed to be a significant uranium deposit approximately 20 miles south of Page, Arizona. The ore occurs at near surface to a depth of 200 feet below surface. It was indicated that several of the Gamma Ray logs penetrated high-grade ore zones.

### IV. GENERAL

General Electric is presently building an ore-buying station in Naturita, Colorado. They will be offering a price double that currently being offered to independent miners by Union Carbide and Atlas. The small miners have been taking the brunt of the effects of low price future contracts that these mills made a few years ago.



RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00716

Salt Lake City, Utah  
June 18, 1975

TO: DR. S. MUESSIG  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - MAY, 1975  
URANIUM EXPLORATION

I. DRILLING SUMMARY

MONTHLY DRILLING  
MAY, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Colorado	Sterling	77	22,700	77	0	0	
New Mexico	La Ventana	6	17,600	6	0	0	
Wyoming	CCI-Thunderbird	3	1,700	3	0	0	
Wyoming	CCI-Excluded	19	2,520	5	3	11	
Total		105	44,520	91	3	11	

\* Mineralized hole = G.T. .20% minimum 4' of .05%

\*\* POI = G.T. of .60% - minimum 6' of .10% (underground)

1973 TO DATE DRILLING  
THROUGH MAY, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	9	27,300	9	0	0	
Colorado	Sterling	112	36,590	112	0	0	
Wyoming	CCI-Excluded	106	63,800	26	28	52	
Wyoming	CCI-Thunderbird	911	337,229	583	189	139	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	10	9,140	9	0	1	
Total		1,224	572,580	797	235	192	

CVX 00717

## II. OPERATIONS

### ARIZONA (Reported by Ken Rank)

#### Santa Rita Mountains

The Santa Rita Mountains active stream sediment geochemical study has ended. Data from 239 samples reveal that one area roughly two and one-half miles square contains uranium concentrations between 2.5 to 9 times background, or up to 40 ppm  $U_3O_8$ . This area corresponds to a small upper Cretaceous quartz monzonite stock. Geologic and geochemical follow-up of this area revealed that the anomaly corresponds to "black sand" horizons in alluvium and stream sediments. A number of rock and minus 80-mesh stream samples contain uranium values similar to those found in the Dutch Flat "black sand" radioactive occurrence in Mohave County, Arizona. Uranium in samples from Dutch Flat were typically on the order of 18 ppm  $U_3O_8$ ; similar samples from this area of the Santa Rita Mountains contained an average of 15 ppm  $U_3O_8$ . No further work is recommended in the area.

### CALIFORNIA (Reported by Ken Rank)

Crismar Mining Company's radioactive pegmatite occurrence, located near Barstow, has been reviewed. Briefly, Precambrian rocks consisting of hornblende, hornblende diorite, amphibolite, gabbro, chlorite-biotite schist, migmatite and granite gneiss have been intruded by an unzoned uraninite-bearing leucogranite-quartz monzonite pegmatite. It is the Rössing-type.

Anomalous radioactivity is confined entirely to the pegmatite. Uraninite and uranothorite are the main uranium-bearing minerals. Accessory radioactive(?) minerals include zircon, sphene, monazite and ilmenite. The principal supergene uranium mineral is zippeite.

Judging from the present size and foreseeable characteristics of the pegmatite at depth, the occurrence does not appear to offer much hope for discovery of a commercial deposit.

### COLORADO

#### Sterling Project, Logan, Sedgwick and Weld Counties

The Sterling Project drilling program was completed May 19, 1975. The program consisted of 112 widely spaced holes for a total of 36,500 feet.

A minute trace of  $U_3O_8$  was encountered in a sandy shale (White River) in hole No. 2, Sec. 36, T11N-R75W. Three offset holes (100' centers) were drilled with no increase in radioactivity being indicated on the gamma-ray log. No additional drilling is planned for the area at present.

An evaluation report of the project area will be written and submitted to the Joint Venture group in the near future. Recommendations concerning our future land position in the area will be included in the evaluation report.

CVX 00718

San Juan Project (Dolores Anticline) (Reported by K. Rank)

On May 27th, a meeting was held with Mr. Steve Kosanke, the claim staking contractor for the San Juan Project. Plans are being laid so that the first claims will be located on June 4. Kosanke believes that the so-called "SJ" claim group, consisting of about 418 lode claims, can be located in about one week. The total staking job should take no longer than 60 days to complete.

NEW MEXICO

El Dado Project, McKinley County (Reported by W. M. Pennell)

Pioneer Nuclear started deep test drilling (4000 feet) in the project area on May 23.

La Ventana Project, Sandoval County (Reported by W. M. Pennell)

A six-hole drilling program, totaling 17,600 feet, was completed on May 31. The best uranium mineralization encountered was 4.5' of .005%  $eU_3O_8$  in the Westwater Canyon member at a depth of 2300 feet in the northernmost hole. Trace mineralization was cut in both/either the Jackpile or Westwater in four of the holes. Sandstones were hematitically altered where the mineralization was closely associated with parting or adjacent shales and were gray or pyritic where there was not mineralization or the uranium lay within the sands.

WYOMING

Warm Spring Prospect Submittal (Reported by R. P. Barnes)

The Warm Spring prospect lies on the north flank of the Owl Creek Mountains near the town of Thermopolis, Wyoming. Here a clastic tongue of the Morrison is downfolded into a syncline. Ted Murer, Denver independent, staked the central part of the syncline and submitted this property to us for consideration.

Because the Morrison is well exposed on the flanks of the syncline, it was decided that an airborne radiometric survey should be made. The survey would give a quick indication of the presence of anomalous radioactivity. On May 30 the survey was flown. Flight lines at one-mile intervals failed to disclose the presence of any anomalous radioactivity.

U.J.V. Shirley Basin Lode Claims, Carbon County

Assessment drilling was delayed in the area until the first week of June because of rain. It will take approximately 10 days to complete the job.

GENERAL

Mr. Nick Ferris, of Urania Exploration, Inc., visited the Salt Lake office on May 19 and presented the winter work results of the Crystalline Rockies-Belt Series Projects.

*[Handwritten signature]*

RDC,JR:alr

APPROVED

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00719

MINERALS DEPARTMENT

NOV 15 '75

R. P. BLICK  
C. J. KAMMERER  
~~W. C. HARRIS~~  
D. A. MERRILL  
W. C. HARRIS  
L. C. HARRIS  
L. C. HARRIS  
L. C. HARRIS

ph  
W  
L

	R. P. BLANK	10/12
① →	C. J. KIMBROUGH	
② →	<del>_____</del>	
③ →	D. E. HENDERSON	
④ →	R. E. GENT	
⑤ →	E. W. BELL	
⑥ →	T. W. HARRIS	
⑦ →	R. P. BLANK	

## I. DRILLING SUMMARY

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	CCI-Thunderbird	1	440	0	0	0	
Wyoming	CCI-Excluded	3	1880	2	0	1	6' of .15%
Colorado	Sterling	35	13,890	35	0	0	
	Total	39	16,210	37	0	1	

1973 to Date Drilling  
Through April, 1975

CVX 00720



## II. OPERATIONS

### ARIZONA (Reported by Ken Rank)

In January, the Santa Rita Mountains, southeast of Tucson, were chosen for a reconnaissance active-streams sediment geochemical study. Using samples taken by H. Drewes (1968-1972), of the U. S. Geological Survey, results of 209 analyses indicate that one area is slightly anomalous. This area corresponds with a three-mile square Cretaceous quartz monzonite body containing between 3 and 5 times background amounts of uranium in stream sediments. The area was also found to be anomalous in beryllium as reported by Drewes (U.S.G.S. Bull. 1365, 1973). A geological and follow-up geochemical sampling study was done and the results are pending.

### CALIFORNIA (Reported by Ken Rank)

Rocky Mountain Energy Corporation (Union Pacific) recently completed a 4,000-foot drilling project in the Rosamond Hills, Kern County, California. Nine vertical holes were noted in the area; seven were drilled since January.

Bedrock in the area consists of granitic intrusives of Mesozoic age overlain by volcanics and sediments of the Miocene Rosamond formation. The two units are separated by a fault. Meta-autunite, the only visible uranium mineral seen on the property, occurs along fractures in and adjacent to the main fault. Drilling has been confined to a zone 500 feet wide along the fault.

Drill cuttings inspected with a Gamma Ray spectrometer showed no large anomalies; several 5-foot intercepts contained radioactivity up to 1.5 X background. The best mineralized fracture zone--six inches wide--yielded radioactivity equivalent to 0.20% U.

### COLORADO

#### Sterling Project, Logan Sedgwick & Weld Counties

Preliminary field work in the project area began on April 4. This work consists of contacting land owners and notifying them of our intent to drill on their properties; staking drill hole locations and searching for sources of drilling water.

On April 15 one drill rig was put to work, and on April 21 the second rig was drilling on Company leases. Since inception through April 30, thirty five holes have been drilled for a total footage of 13,890 feet. No favorable radioactive anomalies were encountered in any of the drill holes. At the present rate of drilling, the drilling program will be completed by the last week in May.

### TEXAS

An evaluation report of the Zavala County, Texas, area has been completed and submitted to the District Exploration Manager for his review. This report deals primarily with recommendations concerning a uranium play in the Wilcox and Claiborne groups of Eocene age.

CVX 00721

UTAH (Reported by R. P. Barnes)

TVA has acquired and is drilling three to four townships of land west of the Seven Mile District. The property extends some six miles west of the Green River. They have drilled some 46 holes and are continuing. They have three holes with good ore-grade intercepts located on the flank of the Cane Creek anticline in the southern part of their property. Isopach data indicate they are in a channel in the basal Chinle (Moss Back Member) sands.

WYOMING (Reported by R. P. Barnes)

CCI-Excluded Area

CCI's management (Cleveland) is pressuring Commonwealth to come to terms on the North Butte Project. Commonwealth recently put out a bid request for 36 million pounds of yellowcake and had one offer of a small quantity.

Green River Basin

Approximately 44,000 feet of log from the Shirley Basin were sent to Bill Barbat, of Jackson, Wyoming. In exchange, we are to receive 40,000 feet of log from the Green River Basin and an opportunity to see an additional 50,000 feet of Chevron's logs from the same area.

Arrangements to make an airborne radiometric survey of an area near Thermopolis, Wyoming, have been completed. The survey will be flown as soon as the weather improves. It should take about one day. The survey is to cover an area of Morrison outcrop along the margins of a syncline just east of Thermopolis. This is the Warm Springs prospect recently submitted to Getty Oil by Ted Mures of Denver, Colorado.

SCOUTING (Reported by W. M. Pennell)

Conoco is currently drilling with four rigs near Freer and with four rigs at Kenedy, Texas. These eight rigs have been on contract with Conoco since early 1971 and will remain with them until at least next year.

Conoco has planned 550,000 feet of drilling and 5,000 feet of coring on their Powder River Basin properties in Wyoming.

In the Crownpoint, New Mexico area, Conoco has nine months of drilling (2 rigs) planned, and in the Rio Puerco, Bernabe Montana Grant, two rigs are now drilling.

Rocky Mountain Energy (U. P. Railroad) has drilled about one-eighth of their 2-mile by 12-mile Coso Lake Bed property in Owens Valley, California. Low grade, near surface, mineralization typifies the deposit of which they believe will be the first large tonnage low-grade deposit to be mined in the United States. Reserves now stand at four million pounds at a grade of .05%-.12% U<sub>3</sub>O<sub>8</sub>.

CVX 00722

Rocky Mountain is also reacquiring the Temple Bar properties evaluated by Getty Oil Company in the late 1960's. The Silver Reef area in Utah is also an active program for Rocky Mountain.

Feasibility studies are being finalized on Rocky Mountain's Bear Creek property in the central Powder River Basin, Wyoming. Development mining is scheduled, pending outcome of the study and environmental impact, for two to three years hence.

R. D. Cypert, Jr.

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

Carl H. Smith

CVX 00723

MINNESOTA DEPARTMENT

APR 17 '75

R. P. HARRIS  
C. J. HENDERSON  
B. A. WICKS  
R. H. WICKS  
W. H. WICKS

188  
~~188~~  
188

Handwritten notes on a document. On the left, there are four circled numbers: ①, ③, ②, and ④. Arrows point from these numbers to specific lines of text in a document. The document text includes "D. A. NICHOLS", "M. R. RUM", "W. R.", and "W. R.". There is a large handwritten "W. R." on the right side of the page.

## II. OPERATIONS

### ARIZONA (Reported by W. M. Pennell)

#### Artillery Peak Project, Mohave County

Public Service Company of Oklahoma (PSO), the operating equal partner in the exploration of the Artillery Peak Project has drilled two 240-foot holes on the State of Arizona lease to the northwest of last year's drilling. The holes have not been probed but the host lake beds are at shallower depths than anticipated. PSO is negotiating a data exchange with Union Oil, the current holders of the Anderson Mine.

PSO, not the Joint Venture, has been doing extensive exploration for similar lake bed uranium occurrences in the area. They have located, with airborne radiometric equipment, four fault bounded, lake bed limestone outcrops which have secondary uranium mineralization on the surface exposure. The occurrence lies 20 miles to the south of the Artillery Peak Project. PSO has located lode claims on this occurrence.

### COLORADO

#### Logan, Sedgwick and Weld Counties

The drilling contractor for the Sterling, Colorado Project has indicated that he could furnish one drill rig (1500 feet capability) and possibly two for our Wyoming projects this summer. Drilling of the Wyoming projects will begin in early July.

Plans are to begin staking drill holes in the Sterling Project area during the first week of April. If good weather prevails, drilling will begin on or about April 15.

### TEXAS

#### Zavala County Area

Evaluation of the uranium potential of the formations included in the Wilcox and Claiborne Groups (Eocene) in the Zavala County area is in progress. The results of this evaluation with recommendations will be submitted as soon as possible.

### WASHINGTON (Reported by K. Rank)

#### Urania-Belt Series

During the month, assay results were received from the rock, stream sediment and water geochemical sampling project of the Mesozoic-Tertiary low mafic quartz monzonites. The object of this sampling program was to determine

CVX 00725

if the intrusives were permissive for the development of a "uranium porphyry" type deposit. Sampling of three selected areas of plutonic environments indicate that the uranium content of both rock and water from the areas are extremely low compared to similar rock types and waters world wide. It is concluded, from a geochemical standpoint, further work in the area would not successfully find a "uranium porphyry." This does not rule out the possible success of further geological investigations for uranium deposits at the contact of the plutons and belt series rocks, or in Tertiary gravels derived from pre-existing contact deposits.

III. SCOUTING (Reported by K. Rank)

Arizona

*Lowie -*  
Exxon Corporation is core drilling a uranium property on the northeast flank of the Rincon Mountains in T.13S., R.18E., Pima County, Arizona. Mineralization of their property occurs in Precambrian chloritic schists. Where the schist is faulted or otherwise crushed, quartz, calcite, dark purple fluorite, pyrite, chalcopryrite and pitchblende fill fracture openings. Pitchblende may also occur as disseminations adjacent to the fractures. Some breccia zones and fracture systems are strongly radioactive. Supergene uranium minerals are relatively abundant.

Utah (Reported by R. Barnes)

Exxon is drilling closely spaced offsets on their Big Flat acreage. Big Flat sits astride the road to Canyonlands National Park and Deadhorse Point State Park. Numerous small deposits were developed in small discrete channel sandstones of the Moss Back in the canyon of the Green River, about 10 miles west of Big Flat during the 50's. Examination of these small occurrences indicates that while similar small deposits might be found back from the canyon rim, there was little expectation for the discovery of major deposits here.

RDC,JR:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

*R. D. Cybert, Jr.*

*Carl H. Smith*

CVX 00726

Salt Lake City, Utah  
April 9, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: U. S. METALS PROGRESS REPORT  
MARCH, 1975

MINERALS DEPARTMENT  
APR 14 1975  
R. P. BLANC  
C. H. SMITH  
C. MUESSER  
D. A. MURPHY  
K. H. SMITH  
L. C. ROSE  
J. T. WILLIAMS  
J. S. [unclear]

GENERAL

Mineral exploration responsibility for Alaska was transferred to the Salt Lake operations office. Along with this transfer, we entered into a joint venture with Phelps Dodge to explore the Bonnifield district in Alaska. This area contains permissive geology and structure for discovery of copper-zinc massive sulfide and gold deposits.

U. S. ZINC PROGRAM

1. Greater Cincinnati Arch Venture, Tennessee/Kentucky  
Partners: GOC 50%, Operator; Kinsho 50%

DRILLING - MARCH					CUM. DRILLING - 1975		ACREAGE
Area	Holes in Progress		Holes Completed		Completed Holes		
	No.	Feet	No.	Feet	No.	Feet	
Gordonsville	1	1504	1	1704	5	7221	14,779
Mulberry			1	15	3	5186	3,994
Difficult D.D.	2	1022	2	1570	4	3333	19,634
Difficult Rotary	-	-	4	4019	8	7445	
Totals	3	2526	8	7308	20	23,185	

Drilling in the Gordonsville project failed to establish continuity of mineralization or brecciation. Drilling will be suspended upon completion of the present hole.

Drilling in the Difficult project has intersected trace zinc but no significant mineralization has been encountered. An additional 400 acres have been leased to cover the northern projection of the Difficult mineral trend.

CVX 00727

U. S. GOLD PROGRAM

1. Mercur Project, Tooele County, Utah

Partners: GOC 75%, Operator; Gold Standard 25%

Standard cyanide laboratory tests continued on drill cuttings from Mercur Hill. Mineralogical and electron probe investigations were continued at the University of Utah.

Plans for 1975 drill program were finalized and coring is scheduled to begin April 15, 1975, on Mercur Hill.

The outstanding undivided interest in the Mercur Hill-Golden Gate area were contacted. A proposal to purchase was presented but not accepted to date.

U. S. COPPER PROGRAM

1. C. A. Project, Arizona/New Mexico

Partners: Newmont 33 1/3%, Operator; Coastal 33 1/3%; GOC 33 1/3%

Hole CG-8, a 500-foot offset to the north from CG-5, has intersected the chalcocite blanket at 2047 feet. Drilling is continuing at 2120 feet where another spot core will be taken.

Scouting of ASARCO-FREEPORT drilling indicates they have good primary copper mineralization in their test hole on the east side of SW $\frac{1}{4}$  Section 7, T6S-R5E. It would seem prudent to purchase all unsold lots in Section 7. Also, pending acquisitions in this area should be finalized. A land check of Sections 5 and 8 should also be accomplished with all public domain and/or state land being located or leased.



CHS:alr

cc: Mr. P. E. Carlton

CVX 00728



Salt Lake City, Utah  
March 11, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/WILLIAM M. PENNELL  
SUBJ: MONTHLY PROGRESS REPORT - FEBRUARY, 1975  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
MAR 17 1975	
MR. P. BLANC	
C. J. KURDEBT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
L. T. WILLIAMS	
FILE	

I. DRILLING SUMMARY

1973 TO DATE DRILLING  
January and February, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI**	
Wyoming	CCI-Thunderbird	153	19,460	112	15	26	
Total		153	19,460	112	15	26	

\* Mineralized hole = G.T. .20% - minimum 4' of .05%  
\*\* POI = G.T. of .60% - minimum 6' of .10% (underground)

1973 to Date Drilling  
Through February, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (LaVentana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,400	19	24	41	
Wyoming	CCI-Thunderbird	856	326,965	562	168	126	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	10	9,140	9	0	1	
Total		1029	503,726***	651	210***	168	

\*\*\*corrected

CVX 00729

NEW MEXICO SCOUTING

Conoco has one rig working in the Rio Puerco area and will begin drilling near Getty Oil's eastern Church Rock tracts in early March.

Conoco will return to their Crown Point project to drill on a 200-foot grid. The Mineralization encountered so far is lower in grade than the average for the Grants Mineral Belt, but Conoco still feels that a 10 million pound reserve may be developed on their property.

++++

Mobil is drilling with two rigs on a 1000-foot grid northwest of Crown Point. Mobil's previous drilling was on trend with Conoco's. This grid is reportedly downdip from the oxidation-reduction interface, in reduced ground, and may be another, parallel trend to the north. Their drilling is too wide-spaced to yield a valid economic assessment of the mineralization encountered to date.

++++

Phillips Petroleum continues to drill the deeper portions of the basin. Currently two rigs are drilling two north-south fences with 4000' hole spacings in T.19N., R.11W.

++++

Gulf is drilling in the Lee Ranch-Mt. Taylor area with two rigs and near Western Nuclear's Ruby Wells reserves.

++++

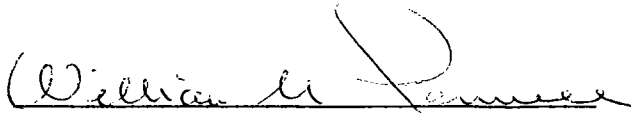
Teton and Pioneer Nuclear are each drilling on their properties north and east of the Church Rock district.

++++

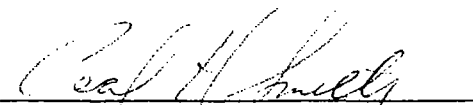
A map of the eastern flank of the San Juan Basin is attached upon which are plotted the approximate locations of competitors exploration programs. These locations were obtained from scouting and court house checks. Although some areas appear open, virtually all the land having drilling depths less than 2000 feet to test the Morrison sandstones, are held by major companies, speculators or are controlled by Indian Reservations.

WMP:alr

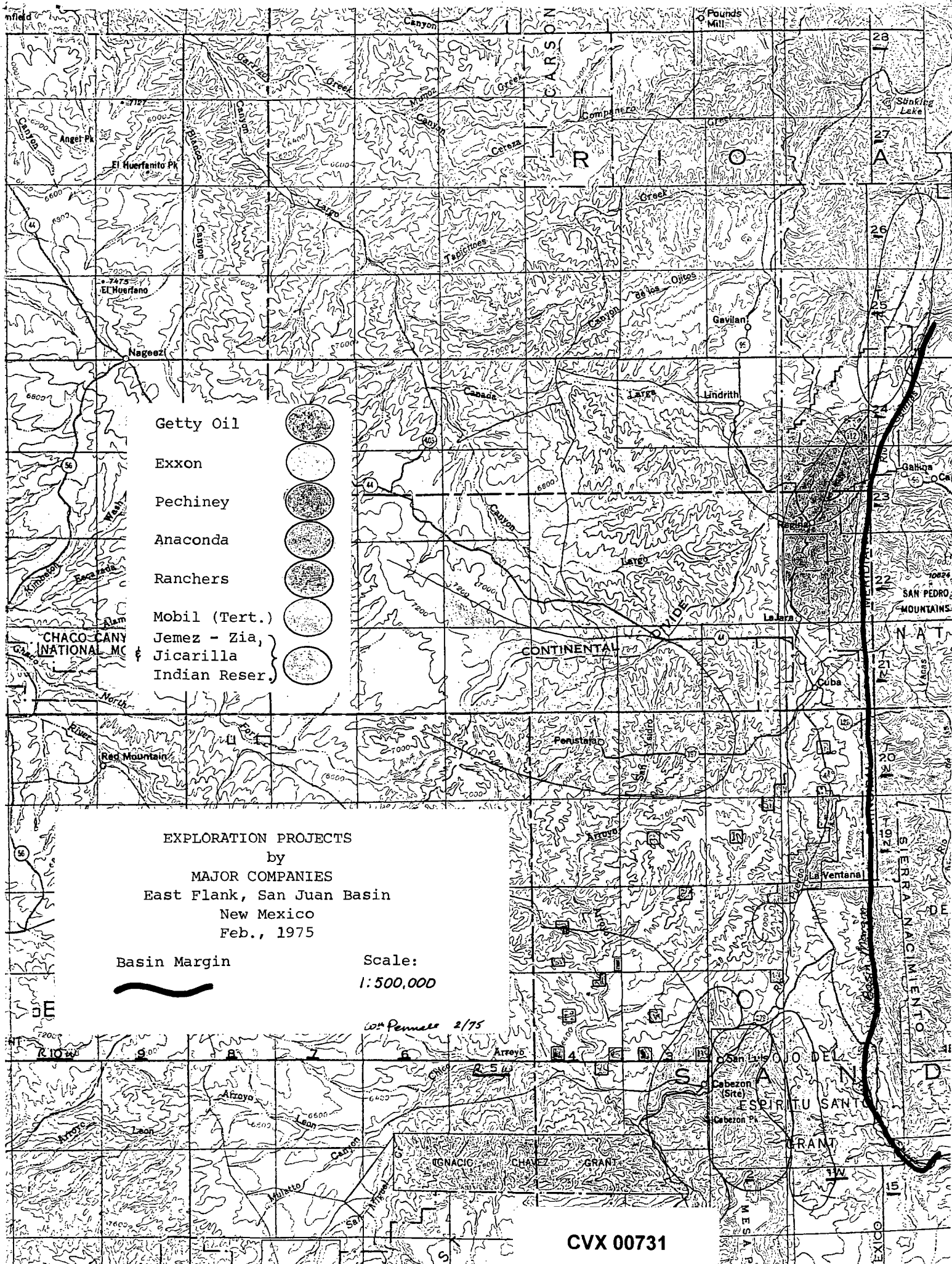
cc: Messrs. P. E. Carlton  
G. E. McKinley



APPROVED



CVX 00730



- Getty Oil
- Exxon
- Pechiney
- Anaconda
- Ranchers
- Mobil (Tert.)
- Jemez - Zia,
- Jicarilla
- Indian Reser.

EXPLORATION PROJECTS  
by  
MAJOR COMPANIES  
East Flank, San Juan Basin  
New Mexico  
Feb., 1975

Basin Margin

Scale:  
1: 500,000

CVX 00731

Salt Lake City, Utah  
February 3, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - JANUARY, 1975  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
FEB 5 '75	
R. P. BLANC	
G. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

I. DRILLING SUMMARY

1973 TO DATE DRILLING  
Through January, 1975

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,400	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	50	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	10	9,140	9	0	1	5' of .12% @ 461'
Total		873	483,266	539	193	142	

\* Mineralized hole = G.T. .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - min. 6' of .10% (underground)

II. OPERATIONS

ARIZONA

Artillery Peak Project, Mohave County

On January 6, 1975; a Joint Venture Meeting concerning the Artillery Peak project was held with Public Service Company of Oklahoma in Getty Oil Company's Salt Lake City office.

A summary and Getty Oil Company's conclusions of the 1974 program were presented by Bill Pennell. Getty Oil, as operator of Phase II, recommended that no additional expenditures be made on the property in 1975. Public Service of Oklahoma agreed with this recommendation. However, it was brought out that

CVX 00732

\$2,400.00 of exploration work must be completed on the State of Arizona Prospecting Permit before October 1, 1975, to extend the permit for an additional one-year period. It was agreed that PSO would attempt to meet this commitment by drilling two holes on the property or some other acceptable exploration expenditure should a rig not be available.

#### COLORADO

##### Huerfano Basin (Reported by R. P. Barnes)

Sample and electric logs from 55 holes were received from Teton Exploration in exchange for logs from two of Getty Oil's Wyoming projects. Many of the holes have multiple anomalies with some of the anomalous intervals up to 0.17% eU<sub>3</sub>O<sub>8</sub>. These data are presently being incorporated into the geologic study of this area. Recommendations concerning land acquisition in the area will be submitted on completion of the study.

Master Title Plats of this area showed a mixed ownership of Federal lands and private ownership.

##### Oil Shale Program (Reported by R. P. Barnes)

A drilling contract was mailed to Bud Himes for drilling on Getty Oil's shale properties. Logging and core analysis companies were contacted to discuss their services and price schedules.

##### Sterling Project, Logan, Sedgwick and Weld Counties

A new land map showing the exact location of the leases held by the Joint Venture group and a drill hole location map, showing proposed 1975 drilling, have been prepared and submitted to our partners.

A drilling contract for two drill rigs has been signed with Medco Inc. of Fort Collins, Colorado, to begin drilling in the project area during the second quarter of 1975. This is the same contractor that did the drilling in the original Weld County Project area. The bid was for \$0.80 per foot for drilling depths up to 500 feet. Medco was the only company contacted with rigs available for the scheduled start-up date to bid on the drilling.

#### NEW MEXICO

##### La Ventana Project (Reported by W. M. Pennell)

Lavar Wells of Unzicker and Wells Drilling Company visited the project area and has since submitted a bid for the drilling to be done. Also, one other contractor has shown interest in submitting a bid for the project drilling.

Two oil test holes are being drilled on our proposed La Ventana prospect area. A Company geologist will log the cuttings and obtain E-logs from these test holes.

CVX 00733

WYOMING

Cecil Smith spent two days in Casper with Mr. John Schulte (a consulting geologist) reviewing subsurface data from oil well logs of holes drilled in the northern portion of the Green River Basin.

Washakie Basin Prospect, Sweetwater County

The evaluation report of the fourth quarter 1975 drilling has been completed and submitted to Management. The report includes recommendations for a 1975 drilling program to further evaluate the mineralized area and to drill other state leases favorably located within the prospect.

SCOUTING (Reported by William Pennell)

Kerr-McGee Corporation has closed their Austin, Texas, uranium office. Exploration of their Texas prospects will be handled from its Oklahoma City office.

Reports are that Kerr-McGee has developed from 8-10 million pounds  $U_3O_8$  reserves on their Marquez, New Mexico, property.

It has been reported that Exxon has developed 10 million pounds  $U_3O_8$  on their L-Bar New Mexico properties.

Phillips Petroleum Company is drilling in eastern New Mexico; they are testing the Santa Rosa formation. Drilling depths are 2000 feet with no reported  $U_3O_8$  mineralization.

Phillips has staked 18,000 acres of National Forest land near Durango, Colorado.

Phillips has also recently acquired 30,000 acres of state leases in San Juan County, Utah, and 45,000 acres of state leases in the San Rafael district in Utah. They are also staking lode claims in these areas.

RDC,JR:alr

cc: Glenn E. McKinley  
P. E. Carlton

R.D. Gypert Jr.

APPROVED Paul H. Smith

CVX 00734

Salt Lake City, Utah  
January 3, 1975

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - DECEMBER, 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
JAN 3 '75	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KIMMERT	
H. LAURSEN	
S. MUESCH	
D. A. NICHOLS	
F. J. NOWAK	
K. M. REIM	
L. C. ROVE	
B. L. WISEMAN	
FILE	

I. DRILLING SUMMARY

MONTHLY DRILLING  
December, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	Washakie Basin	3	2,540	3	0	0	
Total		3	2,540	3	0	0	

\* Mineralized hole = G.T. .20% - minimum 4' of .05%  
\*\* POI = G.T. of .60% - min. 6' of .10% (underground)

1973 TO DATE DRILLING  
Through December, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (LaVentana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,400	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	50 <sup>①</sup>	51,713 <sup>②</sup>	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	10	9,140	9	0	1	
Total		873	483,266	539	193	142	

① Corrected  
② Corrected

CVX 00735

## II. OPERATIONS

### ARIZONA

#### Artillery Peak Project, Mohave County (Reported by W. M. Pennell)

The Artillery Peak Project area has been sufficiently tested to preclude the existence of a commercial uranium deposit and a report so stating was submitted. A progress report was also distributed to the joint venture partners, Public Service Company of Oklahoma and Skelly Oil Company, summarizing the 1974 exploration on the property.

#### Dutch Flat, Yucca, Arizona (Reported by K. Rank)

The Dutch Flat radioactive anomaly has been studied. The radioactivity is the result of rare earth-thorium-and uranium-bearing minerals; rubidium-87, lanthanum-138 and potassium may also have contributed to the radioactive anomaly. The mineral fluorite ( $\text{CaF}_2$ ) is also present in the alluvial fan occurrence; this mineral may occur there in commercially important quantities. Screening, magnetic and chemical tests will be conducted during January to determine the distribution and content of fluorite in the alluvial fan sands (Fig. 1).

### COLORADO

#### Huerfano Basin (Reported by R. P. Barnes)

A field examination was made of three widely separated areas north of Gardner, Colorado, where some modest exploration work had been done in the Fifties for uranium. Count up to 8000 cps was detected (maximum limit of detection is 10,000 cps) and several spots were found where the count ranged from 1000 cps to 3000 cps. Background in this area is 160-180 cps. Reconnaissance in the surrounding area disclosed two previously unreported anomalies in the 1000 to 3000 cps range. Samples were taken and are currently being assayed.

### NEW MEXICO

#### Ignacio Chavez Grant (Reported by W. M. Pennell) Sandoval & McKinley Counties

A Joint Venture meeting was held at Pioneer Nuclear's office in Albuquerque to discuss the past and future exploration on the Ignacio Chavez Grant. Twelve holes have now been completed, on the 48,000 acres of the Grant, through the Jackpile and Westwater sandstones. Jackpile thicknesses in excess of 60 feet and Westwater sediments with thicknesses up to 250 feet compare favorably with corresponding units in the major mining districts to the south and southwest. Thirteen holes are planned for next year; on the east, 6 holes will be drilled to better delineate what is believed to be a northeast-trending Jackpile channel, and the remaining 7 holes will be located on the north and west sides of the property to test the Westwater.

Pioneer Nuclear will soon submit a long-range program as a planning guide for continued exploration on the Ignacio Chavez Grant. Pioneer believes exploration at the current level for an additional two to three years will be necessary to provide sufficient data for determining the ore potential of the Grant.

CVX 00736



WYOMING

Washakie Basin Project, Sweetwater County

The exploration drilling program in the Washakie Basin was initiated on October 26 and completed on December 17, 1974. Ten wide-spaced holes were drilled for a total of 9140 feet. The last two weeks of the drilling was hampered by cold and high windy weather conditions.

The mineralization encountered in the area appears at this state of the evaluation to be confined to a local trend and not scattered throughout the basin, as thin, radioactive, sand-shale contacts. Present data indicate the mineralized trend extends eastward from our discovery in Section 36, T.15N.-R.98W. into Section 34, T.15N.-R.97W. The length and width of this trend is not known at this time; additional drilling will be required to establish the limits of mineralization. The accompanying map shows the drill hole locations and a projection of the trend of mineralization in the area.

The mineralized hole is believed to be a significant discovery and the potential for a commercial uranium deposit in the area is very good.

III. SCOUTING (Reported by K. Rank)

About 80 percent of Nevada's total uranium production has come from mines in the vicinity of Austin. These uranium occurrences are located either in or near the contact of Jurassic quartz monzonite on Cambrian shales and quartzites. Alaskites are also present in the area. The area is largely controlled by Exxon and Utah International, Inc.

*R. D. Gypetz*

APPROVED *ed W. Smith*

RDC, JR:alr  
Attachment

cc: Messrs. P. E. Carlton w/attach.  
G. E. McKinley w/attach.

CVX 00737

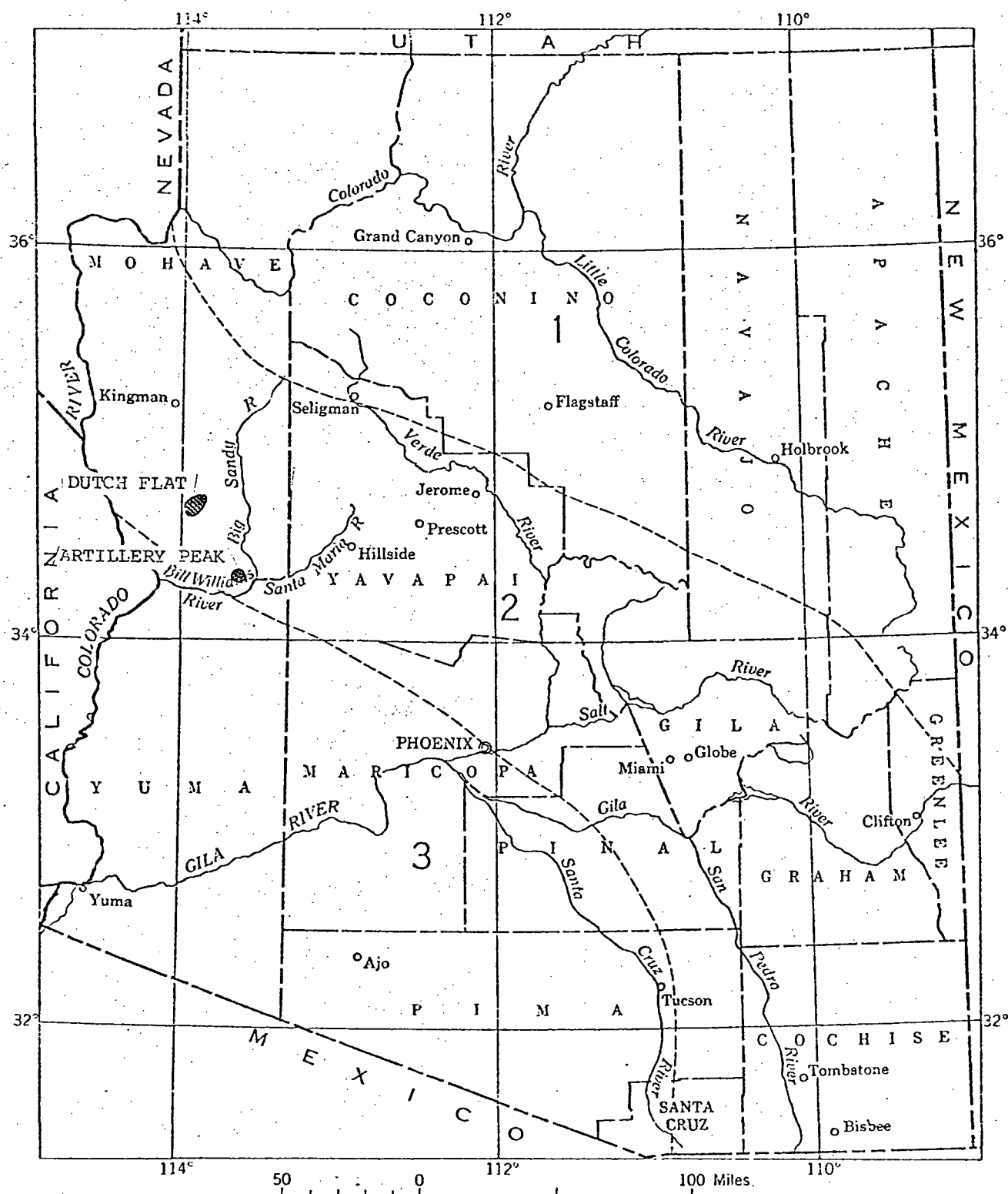


Figure 1---Index map of Arizona, showing the location of the Dutch Flat and Artillery Peak properties. (After Anderson, 1955, p. 3)

CVX 00738

R 96 W



1.

● POI (G.T. = .30 % - Min. 3' of .10 % - Open Pit )  
(G.T. = .60 % - Min. 6' of .10 % - Underground )

REC'D: 0511 50 C1P151 31 DATE: 7/97

Figure 1 is a schematic diagram of the experimental setup. It shows a subject seated at a table, looking at a video screen. A camera is positioned above the screen. A horizontal bar is placed on the table, with a vertical rod attached to it. The rod is connected to a motor unit. The motor unit is connected to a power source. The video screen displays the visual feedback of the hand position.

Di 12/16/74.

Salt Lake City, Utah  
December 27, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT  
DECEMBER, 1974 - METALS EXPLORATION

MINERALS DEPARTMENT	
DEC 31 '74	
R. P. BLANC	185
C. J. KUNDERT	
G. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

① →

② C/F

PROJECT REVIEW

A. U. S. GOLD PROGRAM

1. Mercur Project, Tooele County, Utah  
Partners: GOC 75% Operator; Gold Standard 25%

Mineralogical studies were continued at the University of Utah. A possible cooperative metallurgical program was discussed with the U. S. Bureau of Mines. The Bureau has been responsible for most of the new hydrometallurgical gold processes developed in recent years. It is felt that use of their facilities and expertise will be most helpful in solving our gold recovery problems at Mercur. They have requested we furnish a laboratory assistant and help finance the initial studies.

Rechecking of assays found an error in the chemical standard used in some of our assays. The only significant change in results is in the one rotary hole drilled in the tailings. Reassay results confirm the original U.S.G.S. estimated grade of .06 oz. Au/T for the 3.5 million tons of tailings.

2. Rawhide Project, Mineral County, Nevada  
Partners: GOC 100%

Drilling at Rawhide was continued during the month. Two rotary holes totaling 450' and five core holes totaling 1343' were completed during the month.

Preliminary drilling results have been disappointing. When the present drill program is completed in January, results will be evaluated and recommendations submitted to Los Angeles.

B. U. S. COPPER PROGRAM

CVX 00740

1. C.A. Project, Arizona-New Mexico  
Partners: Newmont 33 1/3%, Manager; Coastal 33 1/3%, GOC 33 1/3%

(a) Casa Grande West (20-52)

Two holes totaling 4578' have been completed to date and by the end of the month the third hole was at 1300'. The second hole was similarly altered as the first but appears to have 200 ppm hypogene copper while the

first hole had 100 ppm hypogene copper.

Negotiations continue to acquire the Tali property to the northwest. Present concepts indicate the center of mineralization is to the west of the ASARCO drill area and additional property should be acquired to the west.

(b) Tombstone (109-142)

During December no additional drilling was completed. The pyritic alteration found to date indicates a possible sulfide system to the northwest. Drilling to date in that direction failed to reach bedrock (2000'). Further testing of the target will require drilling holes to approximately 4000'.

(c) Dos Cabezas (10-25)

Results of our investigation of the land situation indicates that the target area has been subdivided into lots. While all these lots have not been sold, those that were sold contain a restriction against mining activities within the land subdivision. While this is a good porphyry copper target area, it is felt the project should be abandoned because of the land situation and restrictions against mining.

2. CM Claims, Mineral County, Nevada

Partners: Conoco 50%, Operator; GOC 50%

After several delays, drilling was started during December. The first drill hole has only reached 258 feet and results are not expected until January, 1975.

C. U. S. ZINC PROGRAM

1. Greater Cincinnati Arch Zinc Project, Tennessee/Kentucky

Partners: GOC 50%, Operator; Kinsho 50%

The 1975 program and budget were prepared during the month. The first technical meeting with Kinsho is planned for January, 1975.

(a) Gordonsville Project, Smith County, Tennessee

Partners: GOC 25%, Operator; Kinsho 25%, Gulf Oil 50%

Offset drill hole G521-2 was drilled to a depth of 1805'. Several feet of zinc, barite and fluorite mineralization was intersected at 1264'.

The erratic results of the offset drilling indicates the area being tested does not contain strong enough rock preparation or mineralization to result in a major zinc deposit. Drilling is continuing under the program approved by Gulf Oil Company.



Salt Lake City, Utah  
December 6, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT  
NOVEMBER, 1974 - METALS EXPLORATION

MINERALS DEPARTMENT	
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R. P. BLANC	1882
C. J. KUNDERT	er
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

PROJECT REVIEW

A. U. S. GOLD PROGRAM

1. Mercur Project, Tooele County, Utah

Partners: GOC 75%, Operator: Gold Standard 25%

1974 drilling has been completed on the Mercur Project. Drill results to date are plotted on attached map for reference.

Drill Summary

Mercur Hill Area	
Number of Holes	40
Footage	11,454
Programmed Expense	\$160,000

Results

Potential Ore Holes	19
Mineralized Holes	13
Barren Holes	8

Also, two holes totaling 575 feet were cored to check assay results and obtain samples for mineralogical studies. One hole drilled 120 feet through the tailing dump showed 90 feet of .09 oz/T.

Planned work during the winter includes mineralogical and metallurgical investigations, preparing cross sections and preliminary ore reserve calculations. ✓

2. Rawhide Project, Mineral County, Nevada

Partners: GOC 100%

Assay results have been received for the twenty-six rotary holes totaling 6580 feet. The better mineralized intercepts are summarized below:

CVX 00742

AREA	HOLE NO:	DEPTH	MINERALIZED		GRADE	
			FROM	TO	GOLD	SILVER
Regent	RWG- 8	405'	85	105	.07	3.10
Grutt Hill	RWG-21	250'	105	145	.097	1.30
" "	RWG-22	250'	110	250	.095	0.55
" "	RWG-23	80'	10	70	.026	0.16
" "	RWG-27	200'	60	90	.104	0.76

### 3. Gold Reconnaissance

#### (a) Idaho

Literature compilation of potential gold deposits in Idaho indicated two areas of possible interest.

##### (1) Harpster District, Idaho County

Series of wide mineralized lodes in sericitized pyritized andesitic volcanics. Sampling in 1929 reported large volume of .10 oz Au/T available.

##### (2) Florence District, Idaho County

Several sheeted zones in altered quartz diorite containing drusy quartz, pyrite, arsenopyrite and gold.

#### (b) Nevada

During the period, we completed field reconnaissance and surface sampling of the Tonopah Divide District. This area appears to have a high potential for developing large tonnage of .10 oz. Au/T and is amenable to openpit mining. Terms are being discussed.

#### (c) California

Just west of the Nevada state line in California, we examined and sampled the ZACA District. Further work is warranted and will be completed next month.

### B. U. S. COPPER PROGRAM

#### 1. CM Claims, Mineral County, Nevada

Partners: Conoco 50%, Operator; GOC 50%

Diamond drilling on the first of two holes has been delayed because of late delivery of drilling bits. Drilling is now planned to start December 9th.

CVX 00743

2. C. A. Project, Arizona-NewMexico

Partners: Newmont 33 1/3%, Operator; Coastal 33 1/3%; GOC 33 1/3%

Exploration activity was confined to the Casa Grande West Project (20-52). One hole was completed to a depth of 2,400 feet and a second hole started. The first hole intersected favorable argillic altered porphyry rock containing 0.10% copper.

3. Cornwall Project, Ste Gevevieve County, Missouri

Partners: GOC 100%

Drilling was completed on this project with unfavorable results. No additional work is planned.

C. U. S. ZINC PROGRAM

1. Gordonsville, Smith County, Tennessee

Partners: GOC 25%, Operator; Kinsho 25%; Gulf Oil 50%

During the month, Gulf gave written notice that they were going to continue participation and planned to complete their \$150,000 work commitment during 1975.



CECIL H. SMITH

CHS:mdc

cc: Mr. P. E. Carlton

CVX 00744



**PARTIALLY SCANNED  
OVERSIZE ITEM(S)**

See document # **2167983**  
for partially scanned image(s).

**CVX 00745**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000

Salt Lake City, Utah  
December 5, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - NOVEMBER, 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
DEC 9 '74	
R. P. BLANC	
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

I. DRILLING SUMMARY

MONTHLY DRILLING  
November, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Wyoming	Washakie Basin	7	6,600	6	0	1	5' of .12% eU <sub>3</sub> O <sub>8</sub>
	Total	7	6,600	6	0	1	

\* Mineralized hole = G.T. .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - min. 6' of .10% (underground)

1973 TO DATE DRILLING  
Through November, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (LaVentana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,400	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Wyoming	Washakie Basin	7	6,600	6	0	1	
	Total	873	483,756	536	193	142	

CVX 00746

## II. OPERATIONS

### COLORADO

#### Dolores Anticline

Data from 19 holes drilled by Kerr-McGee were integrated into subsurface maps of the Dolores Anticline.

#### Logan, Sedgwick and Weld Counties

Leasing arrangements have been completed for 15,000 acres in the project area.

The Salt Lake City office has received a firm drilling bid for exploration drilling to begin in the second quarter of 1975. One other contractor has shown interest in submitting a drilling bid for the area.

### NEW MEXICO AND ARIZONA

Messrs. William Pennell and Kenneth Rank spent the first part of November in the field sampling outcrops.

### WYOMING

#### Washakie Basin, Sweetwater County

Seven holes were drilled in the project area during November. Six of the holes were barren and one (36-15N-98W-1) intersected ore grade material at a depth of 460 feet below the surface.

The gamma ray log from the ore interval indicated the following:

<u>Depth</u>	<u>% eU<sub>3</sub>O<sub>8</sub></u>
460-461'	0.06%
465-470	0.12%
(Two peak grades of .176%)	

Total depth of hole: 1040'.

The mineralization was encountered in the upper portion of a sandstone in the Bridger Formation. The thickness of the mineralized anomaly (10 feet) is most encouraging and indicates the Bridger Formation in this area offers considerable potential for discovery of a commercial uranium deposit.

Drilling in the area was shut down on November 26 and will resume on December 3, providing the weather is favorable. It is hoped that four additional holes (wide spaced for lithologic and structural control) can be drilled in the area before inclement weather conditions shuts down the program.

CVX 00747

Additional available state leases are being leased in the Basin. Legal opinion has been requested concerning the alternative available to Getty Oil regarding the open Federal land within the oil shale withdrawal.

*R. V. Getty, Esq.*

RDC, JR:alr

APPROVED

*Paul W. Lunt*

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00748

Salt Lake City, Utah  
November 6, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. P. BARNES  
SUBJ: MONTHLY PROGRESS REPORT - OCTOBER, 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
NOV 11 '74	
R. P. BLANC	185
<del>OF ST. ROBERT</del>	<del>185</del>
<del>C. MUESSIG</del>	<del>185</del>
D. A. NICHOLS	185
K. M. REIM	185
L. C. ROVE	185
J. T. WILLIAMS	185
FILE	

I. DRILLING SUMMARY

1973 To Date Drilling  
Through October, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,430	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Total		866	477,156	530	193	141	

II. OPERATIONS

COLORADO

Dolores Anticline

Additional information has been received from two companies that have drilled previously in the vicinity of the Dolores anticline. These competitor exploration projects were located in the central and northern part of the area. From Denison Mines, we have received logs of 11 holes. Four hundred seven feet of core of the lower Chinle and Moss Back Member of the Chinle from eight of Denison's holes was examined and described. From Kerr-McGee we have received logs and core descriptions of 19 holes. Negotiations are still in progress with Gulf, Humble and Anaconda. Indications are that we shall eventually receive their data also.

CVX 00749

The new information has facilitated construction of additional structure contour and isopach maps that should better define the more favorable exploration areas on the Dolores anticline.

NEW MEXICO

LaVentana Project, Sandoval County

An operating agreement has been prepared and reviewed, and it will be submitted to Nuclear Corporation in mid-November. The land covered by the agreement involves approximately 11,135 acres. A 60 percent interest will be earned by Getty/Skelly by drilling 10 exploration holes on the property. This will bring our net acreage to 20,360 along the eastern margin of the San Juan Basin.

A newly published study by Lucius Pitkin, Inc., the prime contractor for the Atomic Energy Commission, has evaluated the uranium ore potential of the members of the Morrison formation outside of the Grants Mineral Belt. The attached map shows the relationship of the LaVentana Project acreage to the area found in the study to be favorable for uranium deposition in the Westwater member: Getty/Skelly's present holdings cover all of the available, shallow (under 3000 feet drilling depth) favorable Westwater area.

A favorable Recapture Creek member area lies immediately down dip from the La Ventana Project, at drilling depths in excess of 5000 feet. At this time these depths appear excessive in light of the limited tonnages of known Recapture mines and no acquisitions are planned in this area.

*Robert P. Barnes*

RPB:alr  
Attachment

cc: Mr. P. E. Carlton  
Mr. Glenn E. McKinley

CVX 00750

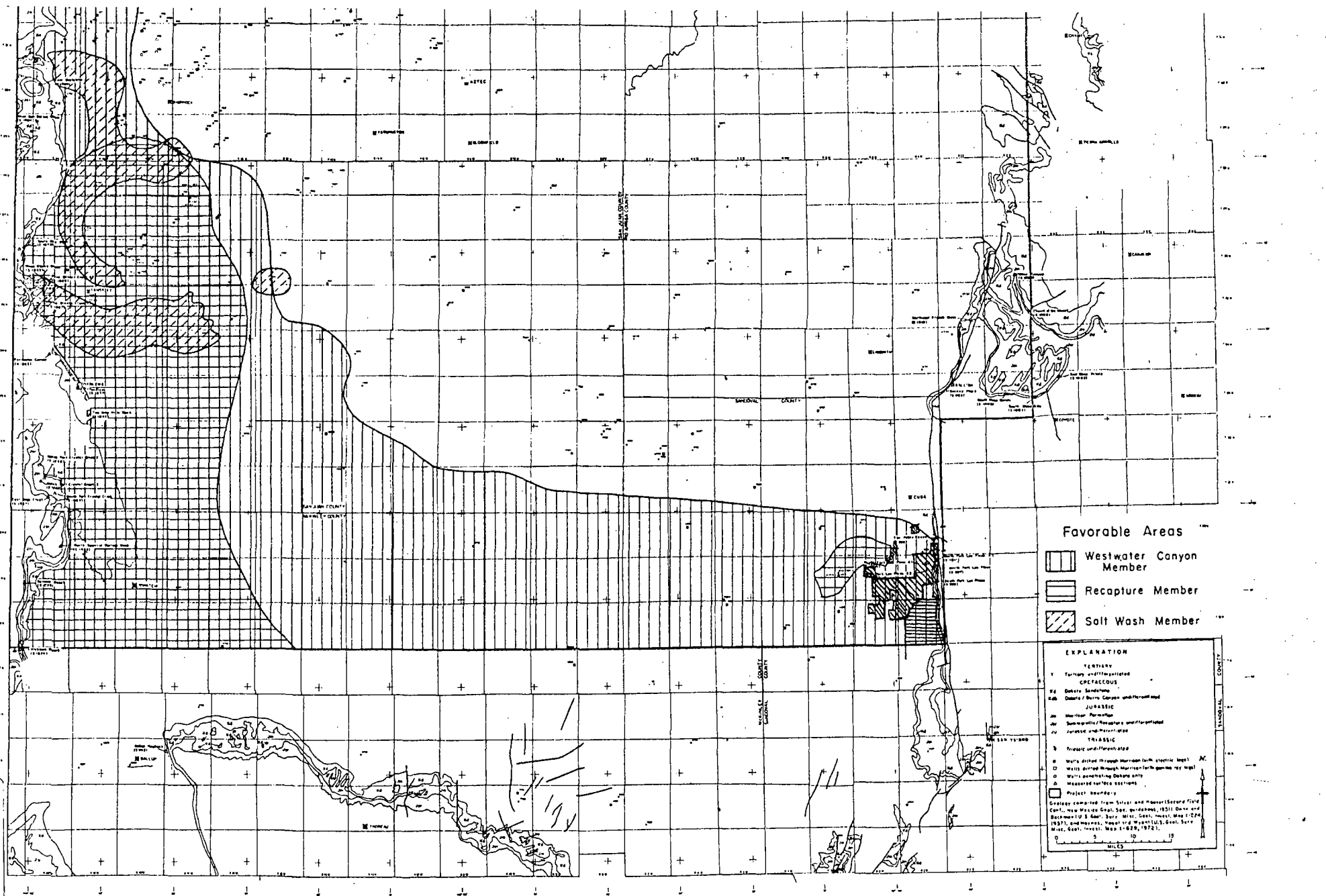


Figure 1. Composite favorability map of the Salt Wash, Recapture and Westwater Canyon Members of the Morrison Formation, San Juan Basin, New Mexico.

From: A Study of the Morrison Formation in the San Juan Basin, New Mexico and Colorado

By: Lucius Pitkin, Inc. GJO-912-20  
January, 1974

La Ventana Project  
Jemez Indian Reservation

Salt Lake City, Utah  
November 5, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT  
OCTOBER, 1974 - METALS EXPLORATION

MINERALS DEPARTMENT	
NOV 7 '74	
R. P. BLANC	<i>BBB</i>
C. J. KUNDERT	<i>BB</i>
S. MUESSIG	<i>BB</i>
D. A. NICHOLS	<i>BB</i>
K. M. REIM	<i>BB</i>
L. C. ROVE	<i>BB</i>
J. T. WILLIAMS	<i>BB</i>
FILE	

① →

② C/F

PROJECT REVIEW

A. U. S. GOLD PROGRAM

1. Mercur Project, Tooele County, Utah

Partners: GOC 75%, Operator; Gold Standard 25%

Drilling continued on Mercur Hill. To date, 34 test holes have been completed with six additional holes planned before completion of the 1974 exploration program. Planned work during November is estimated at \$17,000.

Drill Summary

Mercur Hill Area

Number of Holes	34
Footage	9,584
Programmed Expense	\$137,000

2. Rawhide Project, Mineral County, Nevada

Partners: GOC 100%

Rotary drilling phase of exploration was completed during October. During November six diamond drill holes and two trenches are planned to test three additional potentially mineralized areas. Planned work during November is estimated at \$20,000.

B. U. S. COPPER PROGRAM

1. C. A. Project, Arizona-New Mexico

Partners: Newmont 33 1/3%, Operator; Coastal 33 1/3%; GOC 33 1/3%

(a) Casa Grande West Project (20-52)

A total of 2,560 acres of fee and Federal mineral land was acquired during the period. The initial commitment was \$145,700 or \$56.91/acre. Total purchase costs are \$3,152,000 or \$1,231.25/acre. The prospect area is in

CVX 00752



cultivated cotton land. This project was acquired in competition with ASARCO who originally drilled the area in 1964 and reportedly intersected copper porphyry type mineralization.

Gravity survey indicates a basement ridge extending across lands under option to the project. A drill has been moved on to the property and the first hole has been spotted on Collins acreage just south of the ASARCO close-spaced drilling.

2. CM Claims, Mineral County, Nevada

Partners: Conoco 50%, Operator; GOC 50%

Detailed plane table geologic mapping has been completed for the central target area. Several additional I.P. lines are being completed. This survey will be phase angle I.P. as opposed to the earlier dipole method to enable comparisons to be made.

The first technical committee meeting is scheduled for November 6 in Reno, Nevada. Results of exploration will be reviewed at that meeting and recommended hole locations will be proposed.

C. U. S. ZINC PROGRAM

On October 24th, Getty entered into a joint operating agreement with Kinsho, a Japanese trading company. Kinsho can confirm a 50% interest in Getty's zinc holdings in Tennessee and Kentucky by supplying 80% of the required expenditures until \$2.3 million dollars has been expended. All additional costs will be shared equally.

1. Gordonsville, Smith County, Tennessee

Partners: GOC 25%, Operator; Kinsho 25%; Gulf Oil 50%

Planned Gulf work commitment was completed during the period. Four holes were drilled with one hole intersecting eight or more feet of greater than 4% zinc. Based on this significant intersection, Gulf elected to drill another hole offsetting this mineralization.

D. RECONNAISSANCE PROGRAM

1. Idaho

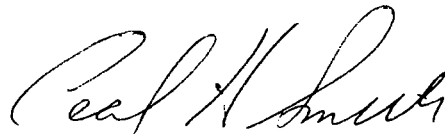
A literature survey of Idaho resulted in outlining six mining districts offering large tonnage-low grade gold potential:

- a) Orogrande-Elk City, Idaho County, Idaho
- b) Ramey Ridge, Idaho/Valley County, Idaho
- c) Yankee Fork, Custer County, Idaho
- d) Dixie, Idaho County, Idaho
- e) Edwardsburg, Valley County, Idaho
- f) Thunder Mountain, Valley County, Idaho

It is proposed to evaluate these areas during the coming year by geologic and geochemical reconnaissance methods.

2. Arizona

- a) Cleopatra - Field mapping and sampling results indicate this prospect does not contain sufficient potential to be of further interest.
- b) Winchester, Cochise County - Field reconnaissance and sampling indicate this prospect may contain a significant tonnage of jasperoid containing from 2-6 oz. silver per ton and .02 oz. gold per ton. Land acquisition has been recommended and will be forwarded to Los Angeles.



CHS:alr

cc: Mr. P. E. Carlton

CVX 00754

Salt Lake City, Utah  
October 14, 1974

MINERALS DEPARTMENT	
OCT 17 '74	
R. P. BLANC	1882
G. J. HUNBERT	1882
S. MUESSIG	1882
D. A. NICHOLS	1882
K. M. REIM	1882
L. C. ROVE	1882
J. T. WILLIAMS	1882
FILE	

① →

② Circul.  
& File

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT  
AUGUST-SEPTEMBER, 1974 - METALS EXPLORATION

PROJECT REVIEW

A. ZINC PROGRAM

Summary: During the reporting period negotiations with Kinsho, et al progressed and it is now expected the operating agreement will be executed sometime near the last half of October.

Drilling activity was confined to the Gordonsville area where Gulf Oil Company completed four holes totaling 7,020 feet.

1. Gordonsville Project, Smith County, Tennessee  
Partners: GOC 50% Operator; Gulf Oil 50%

Holes to date	15
Footage	25,623'
Results:	
POI	2
Mineralized	3
Trace/Barren	10
Total	15

While Gulf has completed their required expenditures for this year, they have elected to drill at least one additional hole to the east. They plan an east offset of the recently completed hole with 10 feet of 4% zinc by visual estimate.

B. COPPER PROGRAM

Summary: During the reporting period three copper projects were active. The Covered Area Project actively drilled the Tombstone and Hachita drill areas and continued negotiations for land at both the Casa Grande West and Dos Cabezas Projects. Conoco completed regional and detailed mapping of the CM claims and has started IP survey. At Cornwall drilling has been delayed because of equipment problems.

CVX 00755

1. C.A.P., Southwestern Copper Porphyry Belt, Arizona-New Mexico  
Partners: Newmont 33 1/3% Manager; Coastal 33 1/3%; GOC 33 1/3%

Tombstone Area (109-142) Two holes, T-7 and T-8 were bottomed in post mineral gravel at 2,000' and 1996' respectively. Drilling has been temporarily suspended pending further study of the depth of post mineral gravel.

Hachita (44-77) Three holes, HD6, HD7 and HD8, intersected unmineralized limestone and volcanic rock at depths of 700', 750' and 750' respectively. No further drilling is planned at this project.

2. CM Claims, Mineral County, Nevada  
Partners: Conoco 50% Operator; GOC 50%

This property was successfully leased jointly with Conoco. Mapping and geophysical surveys are about completed and one or two holes are planned during 1974.

3. Cornwall Project, Ste. Genevieve County, Missouri  
Partners: GOC 100%

Total footage drilled on this project to date is 3825', including incomplete footage in two holes presently being drilled. Results of this drilling have been negative to date. Upon completion of the present holes in progress, the potential of the project will be reviewed to determine if further drilling is warranted.

#### C. GOLD PROGRAM

Summary: During the reporting period drilling was in progress at both Mercur and Rawhide gold project areas. Significant gold mineralization was found in hole intercepts on Mercur Hill and further delineation drilling has been proposed for this area. At Rawhide three potential gold targets have been drilled but assay results not received to date.

1. Mercur Project, Tooele County, Utah  
Partners: GOC 75% Operator; Gold Standard 25%

Initial drilling was completed on Mercur Hill and approval was received for additional drilling during the remainder of 1974.

#### Mercur Hill Area

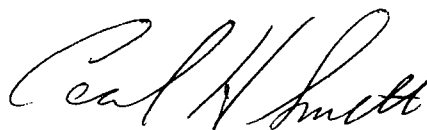
Holes to date	19
Footage	5,149'
Results:	
POI	10
Mineralized	5
Trace/Barren	4
Total	19

CVX 00756

2. Rawhide Project, Mineral County, Nevada  
Partners: GOC 100%

During the period three drill areas were tested: Regent, Grutt Hill and North Grutt Hill Extension. Assay results are not available and will be reported next month.

Holes to date	23
Footage	6,020'
Results:	
Incomplete	



CHS:alr

cc: Mr. P. E. Carlton

CVX 00757

Salt Lake City, Utah  
October 14, 1974

MINERALS DEPARTMENT	
OCT 15 '74	
R. P. BLANC	<i>[Signature]</i>
<del>G. J. KUNDERT</del>	<i>[Signature]</i>
S. MUESSIG	<i>[Signature]</i>
D. A. NICHOLS	<i>[Signature]</i>
K. M. REIM	<i>[Signature]</i>
L. C. ROVE	<i>[Signature]</i>
J. T. WILLIAMS	<i>[Signature]</i>
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - SEPTEMBER, 1974  
URANIUM EXPLORATION

*Circul. & File*

# I. ADMINISTRATIVE

Mr. Kenneth Rank, Geologist, joined the Salt Lake District Uranium Exploration staff on August 5, 1974. This information was inadvertently omitted from the August Monthly Report.

# II. DRILLING SUMMARY

## MONTHLY DRILLING September, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Arizona	Artillery Peak	7	2,855	7	-	-	
Total		7	2,855	7	-	-	

\* Mineralized hole = G.T. .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - Min. 6' of .10% (underground)

## 1973 TO DATE DRILLING Through September, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
Arizona	Artillery Peak	7	2,855	7	0	0	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,430	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Total		866	477,156	530	193	141	

CVX 00758

### III. OPERATIONS

#### ARIZONA

##### Artillery Peak Project, Mohave County

The 1974-75 drilling program on the Artillery Peak project was completed on September 11. Seven holes were drilled for a total footage of 2,855 feet.

The expenditures, borne by Public Service Company of Oklahoma (PSO), assess the lode claims for the 1973-74 and 1974-75 mining years. In addition to these expenditures, PSO is currently locating additional claims thereby expanding the Artillery Peak project land position and confirming their 50% interest in the exploration venture.

The most significant radioactive anomaly encountered was in Hole 74-4: 10 feet of .02%  $eU_3O_8$  was logged at a depth of 350 feet below the surface. None of the anomalies calculated approached ore grade material.

#### COLORADO

##### Logan, Sedgwick and Weld Counties

During the week of September 23rd, approximately 11,000 acres of Federal leases and 23,000 acres of state leases have been filed on in the above counties. Leasing has been initiated to acquire 15,000 acres of fee land for a total land position of approximately 49,000 acres in the project area.

This land is located within the recommended areas for first-phase drilling and along the hydrogeochemical uranium anomalies as outlined in the evaluation report of the area dated September 23, 1974. Evaluation drilling for this project is scheduled to begin on April 15, 1975.

##### Dolores Anticline

Logs of the 11 holes drilled by Denison Mines in the general vicinity of the Dolores anticline were received and have not been incorporated in the geologic interpretation of this prospect area. Of the 11, six holes were bottomed short of the Moss Back member of the Chinle formation. Although several holes were cored, none were cored through the Moss Back--the core intervals were either above or below the Moss Back.

A map was obtained from Denison Mines showing the location of drill holes by competitors in the Dolores anticline area. Some 31 holes have been drilled generally along the north plunge and northwest flank of the anticline. All but one of these holes were located northwest of our recommended acquisition area. Denison Mines drilled 11 holes on the crest of the anticline; Exxon drilled three holes on the west flank; Gulf drilled nine holes along the crest and west flank, and Kerr-McGee drilled 10 holes in the bottom of the Dolores River Canyon on the west flank of the anticline.

Previous exploratory drilling has concentrated on the northern half of the Dolores anticline. The southern half of the anticline remains undrilled and untested.

CVX 00759

These new data have provided a more complete picture of the structure and stratigraphy of the Dolores anticline area, but this drilling was substantially less than a definitive test thereof.

#### Southwestern Colorado

Several days were spent in the field examining outcrops of the Chinle formation south and west of the San Juan Mountains. Although the Chinle is called the Dolores formation in this area, it is lithologically and stratigraphically equivalent to the Chinle formation.

#### NEW MEXICO

##### La Ventana Project, Sandoval County

It was tentatively agreed that Getty Oil/Skelly Oil would acquire a 60% interest in Nuclear Corporation of New Mexico's 11,135 acres of lode claims and State leases in the La Ventana area. To confirm its interest, Getty Oil will drill 10 holes through the Westwater on Nuclear Corporation's property as part of the 1975 exploration program. Getty Oil presently controls 12,660 acres adjacent to the land to be acquired.

#### WYOMING

A surface land check was made in the Oregon Buttes area of the Green River Basin on September 16. It was found that most of the area was staked in 1968, but some recent staking was done by D. H. Bronsen of Riverton, Wyoming. The new claims are located in Twp. 27 North, Rge. 102 West and the location notices were dated September 5, 1974.

##### Washakie Basin, Sweetwater County

A search for a drill rig is still in progress for the Washakie Basin project. If weather permits, field work is planned for the area during the week of October 7. This work will primarily consist of locating section corners, drilling water and establishing access routes to drill sites.

#### IV. SCOUTING

##### COLORADO

Mobil Oil Company has taken under option the Robert Bailey land package in Weld County, Colorado. This is the third major company to evaluate this property within the past four years. They have also filed on 86,000 acres of state land in the South Center Basin (El Paso and Lincoln Counties).

##### MONTANA

It has been reported that Mobil Oil Company has discovered some shallow ore bodies near Ekalaka, Montana. The mineralization is reported to be from 100'-150' below the surface.

CVX 00760



NEW MEXICO

Sohio Petroleum has recently completed a test of the eastern portion of the Baca formation northwest of Socorro, New Mexico. The Baca is a Tertiary arkosic sediment with widespread uranium mineralization. Although some mineral is of ore grade, no significant tonnages have been found. Sohio reports that they encountered red to red-brown arkoses with a few thin mineral intercepts, but their results are not sufficient for them to continue exploration in the area. Anaconda, Ranchers, Western Nuclear and Gulf preceded Sohio into and out of this environment.

WYOMING

Exxon has taken considerable acreage just west of Saratoga, Wyoming.

It is rumored that United Nuclear is planning to begin constructing a uranium mill in the Powder River Basin in 1975. It has been indicated that the mill capacity will be 1000 tons per day or larger. Their properties are adjacent to Exxon's ore areas.

V. GENERAL

According to a source in the A.E.C., the 1974 U. S. uranium exploration drilling will peak at approximately 22,000,000 feet. This falls short of the 29,000,000 feet originally projected for the year. This shortage is primarily due to the shortage of drill rigs and not necessarily a cutback in uranium exploration by private industry.

*R. D. Eppert*

RDC, JR:alr

cc: Mr. Glenn E. McKinley  
Mr. P. E. Carlton

APPROVED

*Ed H. Smith*

CVX 00761

Salt Lake City, Utah  
September 4, 1974

MINERALS DEPARTMENT	
SEP 9 '74	
R. P. BLANC	
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/ROBERT D. CYPERT, JR.

SUBJECT: MONTHLY PROGRESS REPORT - AUGUST, 1974  
URANIUM EXPLORATION

Dr. S. Muessig and Mr. R. P. Blanc were in the Salt Lake City District office on August 14 and 15th reviewing the various exploration projects being conducted by the uranium and metals department geologists.

I. DRILLING SUMMARY

1973 To Date Drilling  
Through August 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (LaVentana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,400	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	0	
Wyoming	Pine Mountain	5	5,053	5	0	0	
Total		859	474,301	523	193	141	

II. OPERATIONS

ARIZONA

Artillery Peak Project, Mohave County

Drilling in the project area began on August 27. No holes were completed for this report period. Some drilling results should be available for the next Weekly Report. This program consists of five holes and the drilling is estimated to be completed by September 10.

COLORADO

Logan, Sedgwick and Weld Counties

The evaluation report and recommendations, based on the data obtained from our recent geochemical program in the project area has been completed. It has been recommended that a land acquisition program be initiated in 1974 to acquire acreage on trend of the most favorable anomalies and that a drilling program to evaluate these anomalies be started in the second quarter of 1975.

CVX 00762

Dolores Anticline Prospect

Robert P. Barnes has completed an evaluation report of the Dolores Anticline Prospect with recommendations to acquire some open acreage in the area for Uranium exploration. The land acquisition program has been suggested to begin in 1974, with an evaluation drilling program to begin thereafter. According to Carl Appelin, A.E.C. Grand Junction office, the Slick Rock District produced 12,000,000 pounds  $U_3O_8$  and 88,000,000 pounds  $V_2O_5$  from the Salt Wash member of the Morrison Formation. The Slick Rock District lies on the north plunge of the Dolores Anticline prospect area. The Salt Wash member is a secondary target on the Dolores Anticline Prospect.

NEW MEXICO

El Dado Project, McKinley County

Pioneer Nuclear and Texas Eastern Nuclear have completed the first hole, Elda #1, on the El Dado Claim block at 4420 feet. A radioactive anomaly, equivalent of 2 feet of .02%  $U_3O_8$  was logged in a Mesa Verde sandstone at a depth of 2251 feet. The Westwater sandstone, the primary target horizon, was barren of uranium mineralization; however, one 70-foot thick sand and a 20-foot sand were encountered in the Westwater interval.

Elda #1 was located in the northwestern corner of the claim block because the volcanics, through which the hole was drilled, were thinnest in that area. Total cost of the hole was probably less than \$50,000.00. Pioneer and Texas Eastern will drill two or three more holes, nearer trend, in the southern portion of the claim block to earn their respective one-third interest.

WYOMING

U.J.V. Shirley Basin, Carbon Co.

All of the maps, reports and office work associated with the U.J.V. assessment drilling program has been completed and distributed to the appropriate departments.

It is recommended that in future years U.J.V. assessment work be planned well in advance to enable the scheduling of a drill rig and logger early enough to avoid the excess time and costs incurred this year; if possible, coordinated with Kerr-McGee's assessment work on KGS claims.

Washakie Basin - Sweetwater Co.

Recommendations concerning a 1975 evaluation drilling program of our state leases in the Washakie Basin have been submitted to the District Exploration Manager.

CVX 00763

### III. SCOUTING

#### NEW MEXICO

Contract loggers claim that the Uranium mineralization currently being drilled by Kerr-McGee near Marquez is the best grade and thickness of any ore found in the Westwater east of Mt. Taylor. Three rigs are currently drilling this occurrence at depths of about 2500 feet. Kerr-McGee is planning to move on top of the volcanic cap in order to follow the mineralization.

The exploration department of Kerr-McGee believes that a development exploration shaft will be sunk next year to further evaluate the "ore" in their Rio Puerco deposit. This area was turned over to the production department three years ago and since then constant drilling has not improved the reserves which the exploration department projected. Rumor gives this deposit about 8-12MM lbs. U<sub>3</sub>O<sub>8</sub>.

Exxon is drilling to the southeast of Kerr-McGee's Marquez area and believes that both their uranium mineralization and Kerr-McGee's will support mills of their own in three to five years. Exxon has been drilling this area on the L-Bar Ranch for three years and has covered more than two square miles with drill holes spaced about 200-500 feet apart. Their mineralization is, as is Kerr-McGee's, in the lowermost Westwater Canyon and occasionally in the Recapture Creek members of the Morrison.

Exxon reports that three men are working full time to sign the Navajos on the Sanastee area. Reportedly, current Washington negotiations with the B.I.A. have been unsuccessful due to the change in administration and election year politicing.

#### TEXAS

Conoco recently moved their uranium exploration office from Corpus Christi to Austin, Texas. The move was made to cover the East Texas District.

Kerr-McGee Corp. and Westinghouse have recently set up uranium exploration offices in Austin.

#### WYOMING

It has been reported that Uranerz is moving a drill rig into the Shirley Basin of Wyoming. Their first drilling will be in Sec. 16, T27N-R78W. Several holes have been drilled in this section over the past 15 years with no favorable mineralization indicated. This property joins the west side of our Sec. 15 (Dave Mine) ore body. It is reported that Uranerz has a Joint Venture in the area with Inexco Oil Co.

RDCJr/pb

cc: Messrs. P.E. Carlton  
G. E. McKinley

APPROVED

*R.D. Gifford*  
*Carl H. Smith*

CVX 00764

Salt Lake City, Utah  
August 6, 1974

MINERALS DEPARTMENT	
AUG 9 '74	
R. P. BLANC	185
C. J. KUNDERS	185
S. MUESSIG	174
D. A. NICHOLS	185
K. M. REIM	185
L. C. ROVE	185
J. T. WILLIAMS	185
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/WILLIAM M. PENNELL

SUBJ: MONTHLY PROGRESS REPORT - JULY, 1974  
URANIUM EXPLORATION

# I. DRILLING SUMMARY

## MONTHLY DRILLING

July, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
New Mexico	Church Rock	1	3,270	1	-	-	
New Mexico	Ignacio Chavez	2	6,310	2	-	-	
Wyoming	Wyoming -Excluded	17	16,545	2	6	9	
Total		20	26,125	5	6	9	

\* Mineralized hole = G.T. of .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - Min. 6' of .10% (underground).

## 1973 TO DATE DRILLING

Through July, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	3	8,100	2	1	0	
New Mexico	Ignacio Chavez	11	30,800	10	1	0	
New Mexico	Chico (La Ventana)	3	9,700	3	0	0	
Wyoming	CCI-Excluded	84	59,430	19	24	41	
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	--	
Wyoming	Pine Mountain	5	5,053	5	--	--	
Total		859	474,301	523	193	141	

CVX 00765

## II. OPERATIONS

### COLORADO

#### Sterling Area, Logan & Sedgwick Counties

Over 150 analyses of water samples taken in the Sterling area have delineated areas of anomalously high uranium content in the White River sandstones. These areas are undergoing field examination prior to specific recommendations for land acquisition.

#### Dolores Anticline, San Miguel & Dolores Counties

The court house record checks have been completed which delineated areas previously held by competitors. The major portion of the land recommended for acquisition has not been previously located.

### NEW MEXICO

#### Church Rock Project, McKinley County

One 3270-foot hole was drilled on the westernmost Church Rock tract. No mineralization was encountered and oxidized Westwater sands were penetrated.

A report summarizing the results of the three-hole program was submitted. A recommendation, based on the lack of ore grade or thicknesses in the mineralized horizon, was made to cease exploration in this area.

#### Ignacio Chavez Project, McKinley & Sandoval Counties

Holes IC-11 and IC-12 were bottomed at 3220 and 3090 feet, respectively. Hole IC-11 intersected nearly 250 feet of Westwater sandstone, while IC-10 penetrated only 160 feet. It appears that in the vicinity of holes IC-11 and IC-5 is a thick Westwater channel system which will need further drilling evaluation.

#### El Dado Project, McKinley County

Pioneer Nuclear is drilling a hole on El Dado as part of its program to earn an interest in Getty Oil Company's claims. At month's end 3950 feet had been drilled toward a projected total depth of 4350 feet. Aeriated mud has proven successful in maintaining low hole costs by the prevention of the lost circulation problem which has plagued most operators drilling through the Mt. Taylor volcanic field. The hole should bottom during the first full week of August.

Pioneer Nuclear has re-set all the discovery posts in the claim maintenance program. All claim corners should be re-set by August 10.

CVX 00766

WYOMING

CCI Excluded Areas

Cleveland-Cliffs reported nine holes with possible ore intercepts and six holes with mineralization in the 17-hole program completed in July. Ten of these holes were drilled in the North Butte patented area to confirm discovery for the B.L.M. The remaining holes were drilled on the west flank of North Butte. Total footage for all 17 holes was 16,454 feet.

CCI Thunderbird

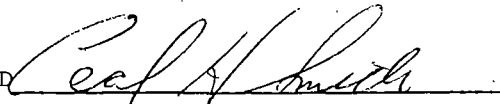
On the last day of the month, CCI was setting up to drill Thunderbird acreage. This drilling is to continue through the month of August.



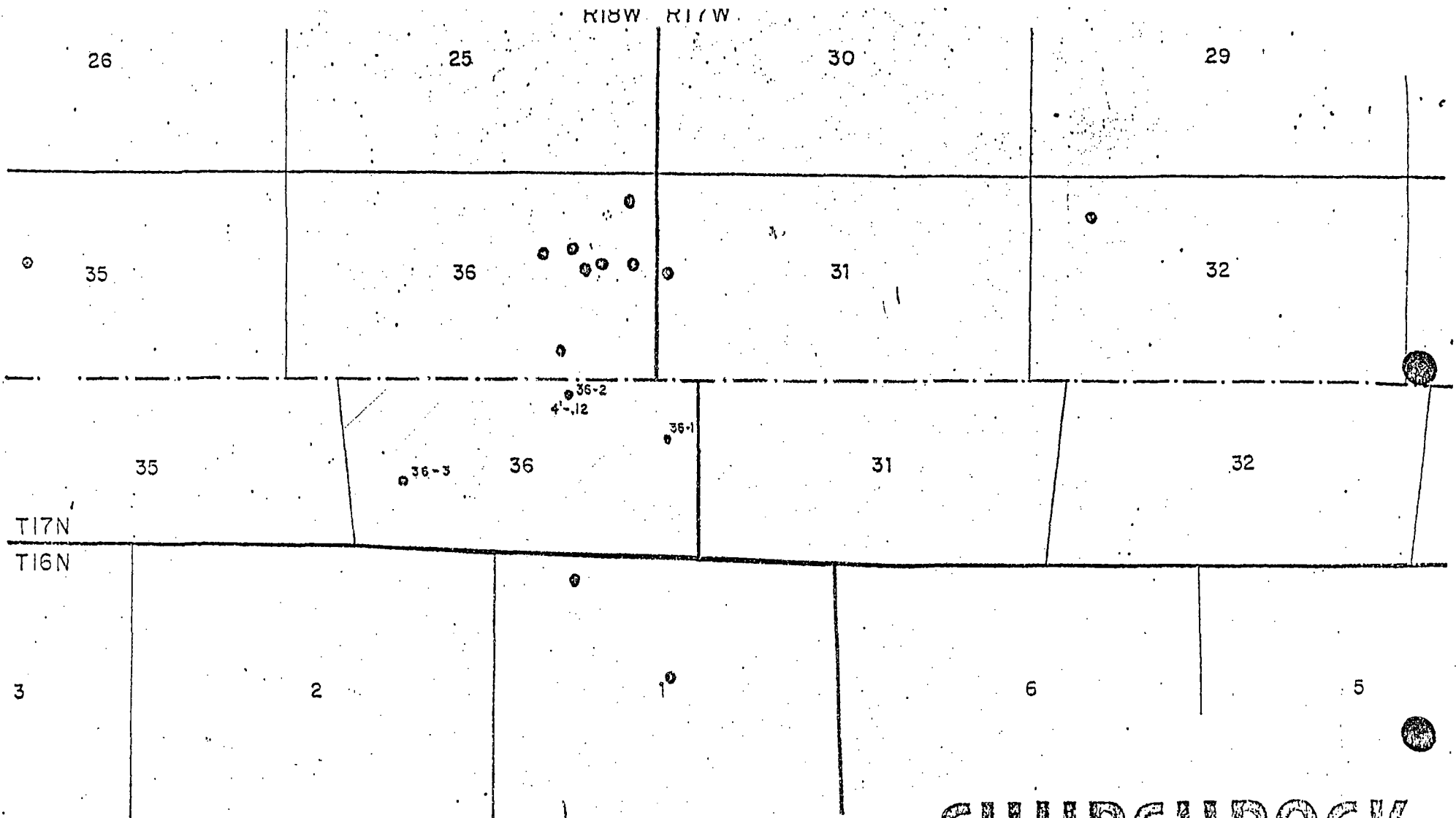
WMP:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley




APPROVED



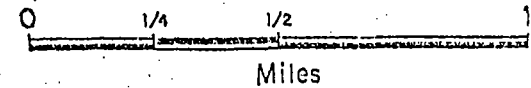
CVX 00767



# LEGEND

-  Getty Oil Land
-  Getty Oil Drill Holes
-  Exxon Drill Holes

CHURCHROCK



CVX 00768



R. 7 W.

R. 6 W.

Hole currently being drilled  
by Pioneer and Texas Eastern

T. 14 N.

T. 13 N.

EL DADO PROJECT  
McKinley County  
New Mexico

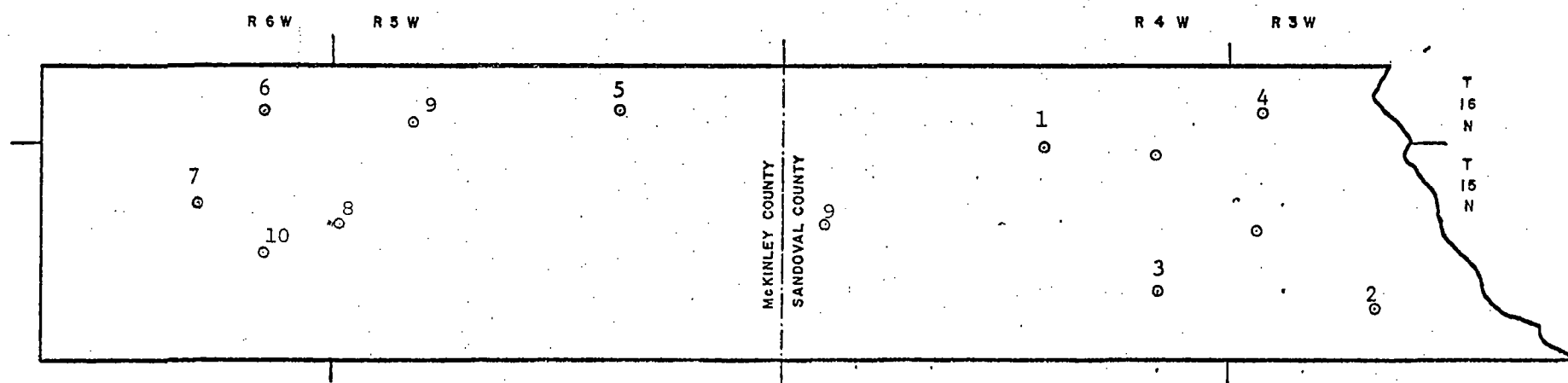
Scale 1" = 1 mile

CVX 00769

# IGNACIO CHAVEZ GRANT

— 47,259 ac. —

Getty Oil Co. (22 $\frac{2}{9}$ %), Skelly Oil Co. (11 $\frac{1}{9}$ %), Texas Eastern Nuclear Corp. (33 $\frac{1}{3}$ %),  
Pioneer Nuclear Corp. (33 $\frac{1}{3}$ %)



## LEGEND

- <sup>4</sup> DRILL HOLE (previously drilled)  
Proposed holes not numbered

## SCALE

0 1 2 3  
miles

CVX 00770

Salt Lake City, Utah  
July 9, 1974

MINERALS DEPARTMENT	
FILE	1274
R. F. BLANC	1882
C. J. KUMDERY	
G. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	W.R.
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - JUNE, 1974  
URANIUM EXPLORATION

③ Conf File

## I. DRILLING SUMMARY

### MONTHLY DRILLING

June, 1974

No drill holes were reported during the month.

### 1973 TO DATE DRILLING

Through June, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1	-	
New Mexico	Ignacio Chavez	9	26,490	8	1	-	
New Mexico	Chico	3	9,700	3	--	-	
Wyoming	CCI-Excluded	67	42,885	17	18	32	W. Flank No. Butte
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	53	51,713	34	16	--	
Wyoming	Pine Mountain	5	5,053	5	--	--	
Total		839	448,176	518	187	132	

## II. OPERATIONS

### COLORADO

#### Logan and Sedgwick Counties

A water well sampling program in Logan and Sedgwick Counties, Colorado, was initiated on June 17. Approximately 100 water samples have been collected during this report period. Assay results of the first 30 samples indicate that the uranium content of the ground water varies from <2 ppb to 66 ppb. The anomalous

CVX 00771

readings appear to be confined in the lower or basal White River sands or fracture zones. The uranium content of the upper Cretaceous beds appears to be quite low in the area where the assay results have been obtained.

Field work for this project, as outlined in recommendations submitted to Mr. C. H. Smith on May 28th, is on schedule and should be completed within 10 days. The assay data will be evaluated when received and recommendations will follow.

NEW MEXICO (Reported by William Pennell)  
Church Rock Project, McKinley County

Drilling will commence during the first week of July on the third hole of our Church Rock property. Two holes were drilled previously at the end of 1973.

El Dado Project, McKinley County

Pioneer Nuclear will commence our exploratory drilling program on the El Dado property the first week of July.

WYOMING  
CCI Thunderbird Joint Venture

Tom Brown Ranch fee minerals were leased to American Nuclear.

III. SCOUTING

COLORADO (Reported by R. P. Barnes)  
Dolores Anticline Area

According to Don Hetland, of the Grand Junction A.E.C. office, several major companies have explored in the general vicinity of the Dolores anticline. American Smelting and Refining Company explored the ground adjacent to the Bullsnaek Mine. The latter is a mine in the Moss Back member of the Chinle Formation in the Dolores Canyon. Exxon has done some exploration, apparently regionally, along from the Dolores anticline northeast to the Lisbon Valley anticline. They are presently drilling at the south end of the Lisbon Valley anticline on properties farmed out from Gulf. Anaconda did some exploration for the Moss Back in the Spud Patch area east of Egnar, Colorado. The Spud Patch is a Morrison uranium mining district on the rim of the Dolores Canyon. Denison Mines has done some exploration toward the south end of the anticline. They've dropped their properties and interest in the area.

Recommendations for land-lease checks will soon be finalized. These court house record checks should disclose the exact location of exploration areas by competitors

CVX 00772

NEW MEXICO (Reported by William Pennell)

Utah International has hired Jerry Jackson, a long-time Kerr-McGee employee, to head their new Albuquerque-based San Juan Basin uranium exploration program.

Utah's present programs include a joint venture with Conoco on their San Mateo properties, southwest of our El Dado claims, and lands requiring greater than 3000-foot drill holes to test the Westwater 10 miles north of Ambrosia Lake.

Phillips Petroleum has acquired 139,500 acres of State leases in the Triassic terrain of eastern New Mexico. This is the second time Phillips has made a major play in the Santa Rosa formation near Tucumcari.

WYOMING (Reported by R. P. Barnes)

Western Nuclear has a present staff in Casper of nine geologists and has six summer hires.

Union Carbide and Rocky Mountain Energy Company (Union Pacific) have both outgrown their offices and have moved into newly constructed, larger quarters.

*R.D. Gifford*

RDCJr:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

*Carl H. Smith*

CVX 00773

Salt Lake City, Utah  
June 18, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - APRIL-MAY, 1974  
METALS EXPLORATION

MINERALS DEPARTMENT	
JUN 21 1974	
R. P. BLANC	<i>1884</i>
C. J. KUNDERT	
<del>S. MUESSIG</del>	<i>m</i>
D. A. NICHOLS	
K. M. REIM	
<del>L. C. ROVE</del>	
J. T. WILLIAMS	
FILE	

*2 Cancelled  
& File*

PROJECT REVIEW

A. ZINC PROGRAM - TENNESSEE

1. Gordonsville Project, Smith County, Tennessee

Holes drilled to date	11
Footage to date	18,603
Results	
Potential Ore Hole	1
Mineralized Hole	1
Trace/Barren Hole	9

Preliminary exploration drilling was completed during the period. All holes showed favorable rock preparation and alteration. One hole intersected mineralization of potential ore grade and thickness and one hole intersected significant mineralization. All other holes only contained traces of zinc mineralization.

Evaluation of these results indicated the potential was poor for discovering significant ore grade mineralization. A farmout was successfully negotiated with Gulf Oil Company in which they will acquire additional acreage and do further drilling to confirm a half interest in the Gordonsville Project. Gulf Oil is interested in acquiring a domestic zinc mine and is utilizing the joint venture approach to gain knowledge of the mineral controls.

2. Mulberry-New Market, Lincoln County, Tennessee

Holes drilled to date	2
Footage to date	4,409
Results	
Potential Ore Holes	0
Mineralized Holes	0
Trace/Barren Holes	2

CVX 00774

Two holes completed to date indicate poor rock preparation and alteration. The limestone content found within the potential zinc zone indicates these two holes may be too deep in the paleo basin. The next hole will be located to the west structurally high on the Cincinnati Arch.

3. Celina Joint Venture Project, Clay County, Tennessee

Holes drilled to date	1
Footage to date	2,324
Results	
Potential Ore Holes	0
Mineralized Holes	0
Trace/Barren Holes	1

The first hole completed on the Celina Project encountered generally unmineralized, altered, partly siliceous but unbrecciated rock within the potential ore zone.

The second hole was started during the period and just penetrated the Knox at the depth to date of 1675 feet.

B. COPPER PROGRAM

1. C.A.P. Joint Venture, SW Ariz.

During the period drilling was completed with negative results on four projects. These have been submitted for abandonment:

Brockman Hills (37-70)  
Wickenburg (29-61)  
Dripping Springs-El Capitan (36-68)  
Wickiup (107-140)

The seventh hole (DC-7) was completed on the Dos Cabezas Project (10-25). While only subgrade mineralization was encountered, the pervasiveness of the sulfide system was extended and the favorability of the area confirmed.

At Sacaton West (108-141) two holes were completed. Only unaltered and unmineralized bedrock was encountered.

2. Cornwall Copper, St. Genevieve County, Missouri

Holes drilled to date	3
Footage to date (approx.)	810
Results	
Potential Ore Holes	0
Mineralized Holes	0
Trace/Barren Holes	3

CVX 00775

Assay reports have been received on only two of the three holes, but it is estimated that assay results of the third hole will be similar to the first two holes.

C. GOLD PROGRAM

1. Mercur Gold, Tooele County, Utah


Field mapping continued during the period. Service contracts were executed with drill and road contractors. It is estimated drilling will start early in July.

2. Rawhide Gold, Nevada

Field mapping and sampling continued during the period. Drilling is planned to start in late July.

D. GENERAL EXPLORATION

During the period several gold and copper prospects were examined in Arizona and Nevada. Several of these appear to offer good discovery potential and work is continuing on these favorable prospects.



CHS:alr

cc: Mr. P. E. Carlton

CVX 00776



Salt Lake City, Utah  
June 6, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - MAY, 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
JUN 10 1974	
R. P. BLANC	1858
G. J. MUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

③ Circulate  
to file.

# I. DRILLING SUMMARY

The Salt Lake City office did not receive CCI's drilling report for April in time to include the information in April's monthly report. Therefore, it is included in this month's drilling summary.

## MONTHLY DRILLING

May, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	Thunderbird	10	4,370	6	2	2	H54 - F Sd - 6.5' .10%
							H55 - H Sd - 10' .25%
Total		10	4,370	6	2	2	

\* Mineralized hole = G.T. of .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - Min. 6' of .10% (underground).

## 1973 TO DATE DRILLING

Through May, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1	-	
New Mexico	Ignacio Chavez	9	26,490	8	1	-	
New Mexico	Chico	3	9,700	3	-	-	
Wyoming	CCI-Excluded	67	42,885	17	18	32	W. Flank No. Butte
Wyoming	CCI-Thunderbird	703	307,505	450	153	100	
Wyoming	Poison Spider	50	51,713	34	16	-	
Wyoming	Pine Mountain	5	5,053	5	-	-	
Total		839	448,176	518	187	132	

CVX 00777

## II. OPERATIONS

### Arizona

#### Artillery Peak Project, Mohave County

Terms of a farmout proposal concerning the Artillery Peak Project have been worked out with Public Service Company of Oklahoma. Generally, the Joint Venture would explore and evaluate the Getty Oil owned properties in the area.

### Colorado

#### Logan and Sedgwick Counties ( East of Weld Co.)

Recommendations for expenditures to further evaluate the uranium potential of Logan and Sedgwick Counties, Colorado, have been submitted to the District Exploration Manager. These expenditures are primarily for field work, collecting water well samples for uranium determinations and office interpretation of geologic data. It will take approximately six weeks to complete this program.

### New Mexico

#### La Ventana Mesa Area, Sandoval County

Lode claim staking in the La Ventana Mesa area was initiated on May 14 and completed approximately one week later. A total of 488 lode claims covering approximately 9700 acres was staked during the period.

Preliminary estimates indicate that the drilling depths will be approximately 3000 feet. These depths will include testing of the Westwater Canyon and Jackpile sandstone members of the Morrison formation

### Utah

A study of local and regional exploration guides to the Moss Back member of the Chinle formation has been completed. This study was based on 20 days field work on Moss Back ore deposits from the San Rafael Swell to the Dolores Canyon near Dove Creek in western Colorado. Some 14 different areas were studied. This study has developed two areas that appear to have potential for large Moss Back ore deposits. Additional field work is contemplated for this area. *Good*

### Wyoming

#### Poison Spider Project, Natrona County

The Poison Spider Project report was completed this week. After review and evaluation, recommendations will be submitted to Management.

## III. GENERAL

Messrs. C. H. Smith, R. P. Barnes, W. M. Pennell and R. D. Cypert visited the Rio Algom Corporation Big Indian Mine (near Moab, Utah) on May 8, 1974. The total depth of the shaft is 2620 feet below the surface with present production being mined from the 2550-foot level.

CVX 00778

The ore occurs in a lower sand member of the Chinle formation, Triassic in age. The host bed is a conglomeratic sand with interbedded shale splits; locally, pyrite and carbonaceous trash is abundant. The ore has a lime content varying from 10%-20% in  $\text{CaCO}_3$ .

The area was blocked out on 500-foot drill hole centers for ore reserve calculations and mine planning. The average cost per drill hole was approximately \$18,000 whereas it was indicated that the same hole, if drilled today, would cost approximately \$35,000.

The following information was obtained from Mr. Holloway, their ore control geologist:

1. Total number of employees for mine and mill is approximately 200.
2. Their miners are on contract.
3. The mine is on a 6-day schedule around-the-clock.
4. Production rate is approximately 850 tons per day
5. Mine recovery grade was originally estimated to be 0.35%  $\text{U}_3\text{O}_8$  but appears to be running somewhat less at present.
6. The ore is fed directly from mine mouth to mill; at present, no stockpiles to blend.
7. Estimated mining cost approximately \$25.00 per ton.
8. Initial water problems in the mine were serious, but at present the mine is dry and the water problems appear to be under control.
9. Pockets of methane gas have been encountered, but they are still able to operate with no serious shut-down problems.

#### A.E.C. Land Sale

The following information was obtained from Lucius Pitkin Inc. in Grant Junction, Colorado. They are a consulting firm for the Atomic Energy Commission and handled the bids for the A.E.C. Uranium leases in Colorado.

Cotter Corporation and Union Carbide submitted the highest bids for leases included in the first sale on properties controlled by the A.E.C.

Following is a breakdown of expenditures and commitments for these properties:

Company	Total Acres Bid	Total Bonus	Ave. Cost/Acre	Royalty On Uranium	Royalty On Vanadium
Cotter Corp.	4650	\$665,000.00	\$143.00	*20%	**20%
Union Carbide	701	400,000.00	570.00	20%	20%

\* The royalty on uranium is based on a selling price of \$7.00/lb  $\text{U}_3\text{O}_8$

\*\* The royalty on vanadium is based on a selling price of \$1.50/lb  $\text{V}_2\text{O}_5$

Since the A.E.C. lease sale, Commonwealth Edison has purchased Cotter Corporation for a reported \$18,000,000.00. This purchase includes the uranium mill at Canyon City, Colorado and all producing and nonproducing uranium properties.

CVX 00779

Uranium, Uranerz, GOC/SOC Joint Venture

Uranus Mining Company has three crews in the field doing geological work. We will receive our first progress report from them about July 1.

IV. SCOUTING

Colorado

Union Carbide(?) has a major exploration drilling program looking for extension of the Slick Rock (Morrison ore deposits) west of Dove Creek, Colorado.

Nevada

Mobil Oil Company has recently staked 1100 lode claims north of Tonopah, Nevada.

New Mexico

Bokum Resources has acquired the Michaels Ranch which contains approximately 8000 acres and are presently drilling the ranch with one rig. The property lies approximately four miles north of Getty Oil's El Dado claim group. Although the Michaels Ranch is off the volcanic field, 3000-foot drill holes are necessary to test the Westwater sands.

Conoco reports that they believe the Bernabe Montaino Grant (Laguna Indian Reservation) will be produced when "the yellowcake price doubles." The impression has been that the uranium found there had been very discontinuous although grade and thicknesses were favorable. Conoco continues to explore near Crown Point and on the Navajo Reservation north of Church Rock at depths from 2500 to 3500 feet.

Exxon is presently drilling in the Gallup sag portion of the Navajo Reservation. Holes deeper than 3000 feet must be drilled to test this area.

Exxon has now completed five holes through the volcanics on trend with the Mt. Taylor deposit and at least four holes to the south of the deposit.

Keradamex is continuing to drill with one rig between the Fernandez and the Mt. Taylor ore bodies. They plan to drill one, possibly two 4000-foot holes through the volcanic field of Mt. Taylor, about three miles south of Getty Oil's El Dado claims.

Keradamex is also following Kerr-McGee's drilling (see below) on the east side of Mt. Taylor and will probably offset this drilling later in the summer.

Kerr-McGee is drilling immediately below the volcanic cap of the eastern side of Mt. Taylor. Three rigs are presently drilling 2000-foot holes in very close proximity to holes which were reported to contain significant uranium mineralization. This area is immediately north of Sohio's southern L-Bar option tract and west of Marquez.

CVX 00780

Mobil is "detail drilling," at 2500 feet on the same trend as United Nuclear (see below) in the Dalton Pass area, about four miles northwest of Crown Point.

Pioneer Nuclear is planning to drill Getty Oil's El Dado claims next month. They will also drill 10 holes on Mobil's 30,000 acres of Navajo Reservation lands. These lands necessitate 2500 to 3000-foot holes to test and Mobil had previously drilled 65 holes on the property. In addition, Pioneer plans to drill four to six holes at Ignacio Chavez in late summer.

Pioneer has staked the intervening sections of Sohio's L-Bar checkerboard on Mt. Taylor and will offer Getty Oil the opportunity to participate in that evaluation drilling.

Pioneer also plans a few holes near Dalton Pass.

Sohio Petroleum has recently hired both a mill and a mine manager from Kerr-McGee, and have opened a new office in Albuquerque which will house Fluor Corporation and Sohio until Fluor has established an office on the L-Bar near the mine-mill construction. Sohio is open for joint venture possibilities on lands off the L-Bar, is presently testing the Baca formation northwest of Socorro and will not expand their exploration staff for at least two years.

On the L-Bar option tract, offsetting the Kerr-McGee drilling near Marquez, Sohio has encountered 1' of .10%  $\text{eU}_3\text{O}_8$  at 1500-2000 feet and has a "more encouraging" intercept close by.

Union Carbide is still expanding their staff.

They are presently drilling a 100-hole program between Dalton Pass and Crown Point on lands acquired by Schumaker from New Mexico & Arizona Land Company.

The uranium potential of the Eastern U.S. remains high on Union's priority list.

United Nuclear completed an extensive program on the Navajo Reservation near Dalton Pass which is near Getty Oil's Eastern Church Rock properties. They are presently evaluating the uranium mineralization encountered which is, reportedly, "lots of low grade."

Western Nuclear has opened an office in Flagstaff with a staff of two or three geologists. Out of this office they will oversee the exploration of a gold property near Kingman, a uranium property on the north side of the Grand Canyon and the continued evaluation of the Ruby Wells deposits, south of the Black Jack mine in New Mexico.

Western feels that their Ruby Wells deposits will be produced in the near future: the tonnage is not great but the grade is very good.

CVX 00781

Utah

A drilling program is currently underway in the western part of the San Rafael Desert. A drilling rig was located near the Temple Mountain turnoff on the Hanksville road.

Pechiney's drilling at Green River is in progress. They currently have one rig drilling on properties downdip from the Four Corners Uranium properties for possible extension of the Morrison ore bodies.

*L. D. Byrd Jr.*

APPROVED

*Carl H. Smith*

CHS-RDC,Jr:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00782

Salt Lake City, Utah  
May 6, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH/R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - APRIL, 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
MAY 8 '74	
R. P. BLANC	100
C. J. KUNDER	
S. MUESSIG	
D. A. NICHOLS	14
K. M. REIM	72
L. C. ROVE	150
J. T. WILLIAMS	100
FILE	

*Circular file*

I. ADMINISTRATIVE

Applicants are being interviewed by the District Exploration Manager for the geological position open in the Uranium Department.

II. DRILLING SUMMARY

MONTHLY DRILLING

April, 1974

No drilling in April.

1973 TO DATE DRILLING

Through April, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1	-	
New Mexico	Ignacio Chavez	9	26,490	8	1	-	
New Mexico	Chico	3	9,700	3	-	-	
Wyoming	CCI-Excluded	67	42,885	17	18	32	W. Flank N. Butte
Wyoming	CCI-Thunderbird	693	303,135	444	151	98	
Wyoming	Poison Spider	50	51,713	34	16	-	
Wyoming	Pine Mountain	5	5,053	5	-	-	
TOTAL		829	442,776	512	187	130	

CVX 00783

### III. OPERATIONS

#### Arizona

##### Artillery Peak Project, Mohave County

A field trip to the Artillery Peak properties was made during this report period as a followup to the farmout discussions held with Mr. Ken Baker of Oklahoma Public Service Company. Mr. William Pennell accompanied Mr. Baker to the area for a field examination. In addition to examining our properties, other Tertiary lake beds in the general area were examined.

#### Colorado

##### Logan and Sedgwick Counties

A field examination of outcrop exposures in Logan and Sedgwick Counties was made during the week of April 30th. The areas were examined to determine if the lithologic characteristics of the outcrops offered anything suggestive for a favorable uranium host bed in the area. The outcrops of the possible potential host beds are quite local with much of the area covered by top soil. No significant radioactivity was detected in the outcrop areas.

Additional geological subsurface data needs to be obtained from the area before final recommendations are submitted concerning the favorability or unfavorability of the project area.

#### Utah

##### Grand County

We have obtained approximately 4345 acres of state uranium leases in the Salt Valley, Grand County, Utah.

##### Moab District

One geologist (R. P. Barnes) spent 11 days in the field examining the relationships of lithology, stratigraphy and alteration patterns to uranium occurrences in the general vicinity of Moab, Utah. Outcrops of the Moss Back Member of the Triassic Chinle Formation and Permian Cutler Formation were studied at a number of localities on the flanks and plunge of the salt anticlines of the Paradox Basin. The purpose of this field work is to develop criteria to be used in exploration for Lisbon Valley-type uranium ore deposits.

Although some field work remains to be done, preliminary results have been encouraging. Patterns of alteration and stratigraphic relationships have emerged that should be useful in exploring and developing Chinle ore deposits.

#### Wyoming

##### Poison Spider Project, Natrona County, Utah

A report summarizing 1974 drilling will be completed in May. Preliminary evaluation indicates some areas warranting drilling. Recommendations as to further work will be presented after review and discussion of drill results.

CVX 00784



#### IV. SCOUTING

##### Nevada

It has been reported that Mobil and Kerr-McGee Corporation are actively competing for uranium properties near Tonopah, Nevada.

Union Pacific is actively exploring for vein-type uranium deposits in Nevada.

##### Montana and Northwest South Dakota

Mobil, reportedly, has obtained 70,000 acres (Fox Hills play) in eastern Montana and northwest South Dakota. Mobil personnel indicated that they had encountered ore in two of their recent drill holes. Depth and lateral extent of mineralization was not obtained.

Mobil personnel also indicated interest in Weld County, Colorado. They are interested in an area that covers approximately three townships in an east-west direction along the east side of Joint Venture properties and extends north into Wyoming.

##### New Mexico

Pioneer Nuclear and Texas Eastern Nuclear, Getty Oil Company's partners in the exploration of the Ignacio Chavez Grant, have undertaken another joint venture in the Grants Mineral Belt. Mobil Oil Company has agreed to reduce its interest to 33 1/3% in its wholly owned Navajo Reservation leases (11,520 acres) acquired in the Navajo Sale 5 in 1971.

This is the second large Navajo tract in which Pioneer and Texas Eastern are drilling to earn an interest. In 1973, Pioneer and Texas Eastern entered into a second agreement to gain a one-third (each) interest in the Phillips leases (3200 acres). Both the Phillips and Mobil properties had been drilled at a density of more than one hole per section prior to the farmouts and mineralization, but no ore was encountered on either property at depths of 2300-2800 feet. It is believed that about two million dollars worth of drilling will be required to earn Pioneer's and Texas Eastern's interest.

After two months of drilling, Union Carbide has temporarily halted its program south of San Ysidro on the east side of the San Juan Basin. During that time no holes were bottomed due to the driller's inexperience in the Basin. Union plans to drill 10 holes on their San Ysidro properties.

CVX 00785

Union also plans to drill 90 holes near Crown Point. It is not known from whom they acquired their property there, but it is probably a farmout from a major company (Conoco, Kerr-McGee, Mobil or Exxon) which has previously been drilled at a density of more than one hole per section.

*R.D. Gypert Jr.*

CHS-RDC,Jr:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

*Carl H. Means*

CVX 00786

Salt Lake City, Utah  
April 8, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJECT: MONTHLY PROGRESS REPORT - MARCH, 1974  
METALS EXPLORATION

MINERALS DEPARTMENT	
APR 15 '74	
R. P. BLANC	<i>BS</i>
C. J. KUNDERT	
S. MUESSIG	<i>m</i>
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	<i>kip</i>
J. T. WILLIAMS	
FILE	

*①* →  
*②* →  
*circulate & file*

### SUMMARY

All 1973 Summary Reports were completed this month. They will be forwarded with covering letter shortly. The only active in-house program this month was the Gordonsville, Tennessee, zinc project. Drilling was also carried out on the C.A.P. Arizona-New Mexico copper joint venture.

### PROJECT REVIEW

#### A. ZINC PROGRAM - TENNESSEE

##### 1. Gordonsville Project, Smith County, Tennessee

Diamond drill holes G504-1, G512-1 and G563-1 were completed to depths of 1750, 1550 and 1795 feet respectively this month. Although none of these holes intersected economically significant amounts of mineralization, they did contain traces of zinc; hole G512-1 was visually estimated to contain about 4.5 feet of 1.0% Zn at a depth of 1200 feet. The last hole in the current series at Gordonsville, drill hole G556-1, was collared during March and was at a depth of 1250 feet by month's end.

##### 2. Mulberry-Newmarket Project, Lincoln County, Tennessee

One drill has been moved to the Mulberry area from the Gordonsville project. Drilling will start during the first week in April.

##### 3. New Hope Project, Clay-Jackson Counties, Tennessee

No activity

##### 4. Celina Project, Clay-Jackson Counties, Tennessee

No activity

##### 5. Regional Reconnaissance - Tennessee, Kentucky

A ground magnetic survey is currently underway in the area within a triangle formed by the Fountain Run Kentucky zinc deposit, the new Burkes-

CVX 00787

ville, Kentucky zinc discovery area and the Celina-Brimstone zinc area. Initial results suggest that a favorable looking, untested, steep magnetic gradient lies one to two miles west of the active exploration area near Burkesville, Kentucky.

## B. COPPER PROGRAM

### 1. C.A.P. Joint Venture, Arizona - New Mexico

Expenditure levels for the first quarter of 1974 were reported to be less than planned; these expenditures will pick up rapidly during the second quarter. Although drilling was carried out in three project areas during March no potential ore or otherwise significant core or rotary holes were drilled.

The last hole of the current series at the Dos Cabezas Project near Wilcox Arizona, DC-6, was completed to a depth of 545 feet in weakly altered Precambian schist. The final hole at the Brockman Hills area in New Mexico was completed to 1350 feet in pyritized volcanics, no anomalous copper was found. The first hole at the Dripping Springs project northeast of the Christmas copper mine was completed to a depth of 1200 feet in unmineralized limestone. Field work was carried out on the Quijotoa, Dos Cabezas and Wickenburg project areas. A land study of the prospective Dos Cabezas area was completed and property negotiations have started. Initial results indicate that these negotiations will be lengthy.

Three new project areas have been developed for the Joint Ventures consideration as projects. They are the Scaton West project, located 5 miles west of the Scaton copper mine near Scaton, Arizona, the Casa Grande West project located 8 miles southwest of the Scaton mine and the Harshaw project located off the east flank of the southern Patagonia Mountains southeast of Tucson, Arizona.

### 2. Cornwall Project, St. Genevieve County, Missouri

Drilling bids have been received from several drilling contractors. A contract will be awarded sometime during the month of April.

### 3. Boss-Bixby Joint Venture, Missouri

No activity

### 4. Wisconsin-Michigan Joint Venture

No data were received this month from International Minerals Corporation, the operators of this project.

## C. GOLD PROGRAM

### General


The option on the Rittenhouse claim group in Cripple Creek, Colorado, was allowed to lapse this month following completion of the 1973 report recommending that no further work be carried out. Geologic compilation work and petrographic studies continue on the Rawhide, Nevada, and Mercur, Utah

CVX 00788

projects following completion of the 1973 summary reports in which further exploration is recommended for 1974.

Examination of a copper oxide submittal in the Kingman, Arizona, region was made during this report period. This prospect was located just north of the Bill Williams River in the Rawhide Mountains of southern Mohave County. Although the submittal property was determined to be of no further interest, a cursory examination of other similar deposits of oxide copper associated with hematite in intensely silicified Paleozoic(?) limestones was carried out. Sampling of one of the larger reported deposits indicates that such mineralized zones have a good potential for an open pit gold deposit(s) of at least a  $2 - 3 \times 10^6$  ton or better size range with an average tenor of from .05 - .15 oz. Au/ton. Further investigations of this and other similar types of deposits are planned in this region for the month of April.

Talks were recently held with G. Peter Reed of Gold Resources of New York City. This group controls the Stratton estate gold properties near Cripple Creek, Colorado and the Brewer gold mine near Jefferson, South Carolina. Both properties have interesting and partly demonstrated potentials for the type of large open pit gold deposit(s) of interest to Getty Oil. The deal offered to Getty would require that we earn a 50% equity interest in the properties by spending  $\$1 \times 10^6$  in two years time. Drilling by Gold Resources indicated a minimum proven tonnage of  $1-1.5 \times 10^6$  tons at .05 oz. Au/ton for one of these properties. Although the 50% equity financial requirements are reasonable, the 1974 -75 time table for the exploration commitment being sought by Gold Resources is both too rapid and the minimum expenditure commitment too high. Any significant counter offer that would be likely to appeal to Gold Resources would be many times greater than the uncommitted gold exploration funds available. Therefore, Getty Oil's interest in this situation was terminated.

  
CECIL H. SMITH

RB/pb  
cc: Mr. P.E. Carlton

CVX 00789

Salt Lake City, Utah  
April 8, 1974

MINERALS DEPARTMENT	
APR 15 '74	
R. P. BLANC	
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH/R. D. CYPERT, JR.

SUBJ: MONTHLY PROGRESS REPORT - MARCH, 1974  
URANIUM EXPLORATION

# I. ADMINISTRATIVE

Miss Anita Rogers resigned her stenographic position in the Land Department on March 14, 1974. Her replacement, Mrs. Patricia Briggs, will report to work on April 1st.

# II. DRILLING SUMMARY

## MONTHLY DRILLING

March, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	Poison Spider	5	9,163	5	-	-	1 ft. of .06 @ 250'
Wyoming	Thunderbird	97	28,420	49	24	24	7 holes cont. POI's of .20% and >
New Mexico	Ignacio Chavez	2	7,370	2	-	-	
Total		104	44,953	56	24	24	

\* Mineralized hole = G.T. of .20% - minimum 4' of .05%

\*\* POI = G.T. of .60% - minimum 6' of .10% (underground)

## 1973 TO DATE DRILLING

Through March, 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1	-	
"	"	9	26,490	8	1	-	
"	"	3	9,700	3	-	-	
Wyoming	CCI -Excluded	67	42,855	17	18	32	West Flank N. Butte
"	CCI-Thunderbird	693	303,135	444	151	98	
"	Poison Spider	50	51,713	34	16	-	
"	Pine Mountain	5	5,053	5	-	-	
TOTAL		829	442,776	512	187	130	

CVX 00790

### III. OPERATIONS

#### New Mexico

Ignacio Chavez Grant, McKinley Co., GOC/SOC - 33 1/3%

Drilling of Hole No. IC9 was slow and difficult because of lost circulation problems within the Cretaceous section. The hole was completed on 3/27/74 at a total depth of 4150 feet below the surface. The gamma-ray log indicated no favorable radioactive anomalies in the host sands.

The rig was moved to re-enter and deepen Hole No. IC5. It should be completed to the original intended depth by April 2nd.

#### WYOMING

Poison Spider Project, Natrona County

Hole No. 26-2 was bottomed at 2103 feet below the surface. A thin zone of .06%  $eU_3O_8$  was encountered at a depth of 250 feet. None of the deeper zones contained any radioactive anomalies.

Hole No. 25-2 was drilled to a depth of 1020 feet and bottomed because of high artesian water flow. The hole was probed to a depth of 375 feet then cemented and plugged. No mineralization was encountered.

Hole No. 19-1 was bottomed at a depth of 2060 feet below the surface. The gamma-ray log indicated no favorable radioactive anomalies in the host sands.

Hole No. 30-1 was bottomed at a depth of 1960 feet below the surface. The gamma-ray log indicates traces of mineralization at depths of 373 feet and 379 feet below the surface. Peak grades are .026% and .019%  $eU_3O_8$  respectively. No other mineralization was indicated below these depths.

Hole No. 2-1 was bottomed at a depth of 2020 feet below the surface. The gamma-ray log indicates no favorable mineralization in the host sands penetrated by this drill hole.

Drilling on this project has been completed (for 1974) and one man was in the field the week of March 25 to fill mud pits, plug drill holes with cement and level the disturbed areas for reseeding. Evaluation of the drill data is in progress.

#### CCI Thunderbird GOC/SOC Joint Venture

An evaluation of the potential of the Brown Ranch properties is currently underway. The Brown Ranch includes some 10,951 acres of fee minerals within the Excluded and Thunderbird areas. The Brown Ranch properties are probably the largest block of undrilled properties having a high discovery potential remaining in the Northern Powder River Basin. The area is favorable for additional reserves

CVX 00791

The total milling life of the presently known reserves (assuming the mills operated 350 days per year at their rated capacity) is approximately 13 years. This average approaches the calculated production life of our UJV Shirley Basin ore reserves.

V. SCOUTING

Texas

Kerr-McGee Corporation has recently opened an exploration office in Austin, Texas.

Exxon is actively buying mining leases in the Gulf Coast area.

Framco is exploring for uranium in Garza County, near Post, Texas.

Wyoming Minerals purchased some deep uranium mineralization in the Gulf Coast area for an in situ leach program.

Utah

San Rafael Desert

Exxon is currently conducting a regional exploration program in the eastern part of the San Rafael Desert. They are currently operating two drills between the Green River and Hanksville road (Utah 24) some 30 miles to the west. Hole pattern is reported to consist of holes on mile centers with lines about four miles apart. The target host is the basal Chinle sand (Mossback Mbr.). Reportedly, Exxon is looking for fracture controlled ore deposits similar to those found at Church Rock, New Mexico. The program is being run by Stan Harrison from their Albuquerque office.

Moab Anticline

Both Exxon and Anaconda have taken substantial land positions along the Moab anticline. In general, Anaconda controls the east flank of the anticline and Exxon the west flank. Anaconda did some drilling on their properties last summer and fall with unknown results.

*R. D. Gypert Jr.*

RDCJr:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

APPROVED

*Carl H. Smith*

CVX 00792



Salt Lake City, Utah  
March 19, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - FEBRUARY, 1974  
METALS EXPLORATION

MINERALS DEPARTMENT	
MAR 21 '74	
R. P. BLANC	BSS
C. J. HUNDERT	
S. MUESSIG	W
D. A. NICHOLS	
K. M. REIM	
L. C. ROYE	WR
J. T. WILLIAMS	
FILE	

② →

① →

③ circulate file

SUMMARY

Active exploration during this report period was carried out on the Gordonsville zinc project in Middle Tennessee, and the Dos Cabezas joint venture copper project in southeastern Arizona. The principal activities of the Salt Lake City Metals group during this period was the preparation of summary reports on all projects carried out in 1973.

PROJECT REVIEW

A. ZINC PROGRAM - TENNESSEE

1. Gordonsville Project, Smith County, Tennessee

Two drill holes, 505-1 and 516-1, were completed during the report period (see Enclosure 1). Although no economically significant mineralization was found, traces of zinc were present in each of these holes. Drill holes 504-1 and 563-1 are due to be completed shortly. Preliminary examination of available core indicates good to excellent ground preparation but only traces of zinc mineralization. Land holdings in the project area total about 9100 acres.

2. New Hope Project, Clay-Jackson Counties, Tennessee

Drilling of the second of two holes scheduled for this project area in 1974 will be delayed until it is determined whether a log trade can be made with Exxon on the holes they have drilled nearby (see Enclosure 2). Land holdings in the New Hope project area total about 5465 acres.

3. Mulberry-Newmarket Project, Lincoln County, Tennessee

A land acquisition program in the Mulberry-Newmarket project area along the Tennessee-Alabama border was completed during this report period.

CVX 00793

Some 6462 acres covering a minimal area over 18 of the 22 potential targets was obtained on an option to lease basis. Drilling of the first of the three to five holes scheduled for this area in 1974 will be started during April.

4. Celina Project, Clay-Jackson Counties, Tennessee

No exploration activity has taken place on the Celina joint venture (NJZ) during January or February, 1974. Drilling of the first of four holes planned for this project area during 1974 is scheduled to start during April.

B. COPPER PROGRAM

1. C.A.P. Joint Venture, Arizona-New Mexico

Six holes have been completed on the Dos Cabezas project to date; four of these holes, DC-3, 4, 5 and 6, were drilled in the Spike E Hills area. Drill hole DC-6, the last of the current series (see RGB memo 2/28/74 for hole loc. and disc), bottomed at a depth of 545 feet in weakly altered and pyritized Precambrian schist. Drilling has been temporarily halted pending completion of the land status report and a study of the drill data accumulated to date.

2. Cornwall Project, St. Genevieve County, Missouri

A first-stage acquisition program around the Cornwall mine area in St. Genevieve County, Missouri, was recently completed. Some 4580 of the targeted 8000 or so acres has been optioned on a right to purchase basis. Bids are currently being sought from drilling contractors; exploration work, including geochemical and geophysical work and drilling will be started during April or May, 1974.

3. Boss-Bixby Joint Venture, Iron Co., Missouri

An in-house feasibility study has been completed on the maximum sized Pb-Zn target that could be reasonably projected for the Boss-Bixby holdings. This report indicates that a DCF-ROR for the postulated target (i.e.  $10 \times 10^6$  tons @ 5% Pb; 1% Zn) is on the order of 13-15 percent. All work by the joint venture partners on the Boss-Bixby project, except for the completion of the final report, has now been suspended.

4. Wisconsin-Michigan Joint Venture

No data were received from International Minerals Corporation this month.

C. GOLD PROGRAM

1. General

No active exploration work has taken place on the three Getty Oil gold projects, i.e. Rawhide, Cripple Creek and Mercur, during this report period.

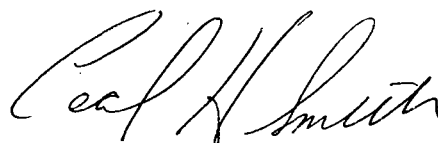
CVX 00794

Mr. Robert P. Blanc

-3-

March 19, 1974

Summary reports for the 1973 work are finished or will be available momentarily. This work indicates that exploration should be vigorously pursued on the Mercur and Rawhide projects. Unless other prospect areas are acquired in the Cripple Creek district, no further work is recommended for the small property explored in this district in 1973.

A handwritten signature in cursive script, appearing to read "Paul H. Smith".

RGB:alr  
Enclosures

cc: Mr. P. E. Carlton

CVX 00795

**PARTIALLY SCANNED  
OVERSIZE ITEM(S)**

See document # **2167983**  
for partially scanned image(s).

**CVX 00796**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000







Salt Lake City, Utah  
March 7, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - February 1974  
URANIUM EXPLORATION

MINERALS DEPARTMENT	
MAR 14 '74	
R. P. BLANC	<i>RB</i>
C. J. KUNDERT	
S. MUESSIG	<i>SM</i>
D. A. NICHOLS	<i>DN</i>
K. M. REIM	
L. C. ROVE	<i>LC</i>
J. T. WILLIAMS	
FILE	

I. ADMINISTRATIVE

Due to the recent resignation of Mr. Zeisloft, one geological position is open in the Uranium Department. Plans are to fill this position with a new employee in the near future.

II. DRILLING SUMMARY

MONTHLY DRILLING

February 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.*	POI**	
Wyoming	Poison Spider	6	11,936	6	-	-	Trace. Up to 1' of .05% in Hole #25-1
Wyoming	Thunderbird	80	29,295	34	23	23	8' - .57%
TOTAL		86	41,231	63	23	27	

1973 TO DATE DRILLING

Through February 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1		
New Mexico	Ignacio Chavez	7	19,120	6	1		
New Mexico	Chico	3	9,700	3			
Wyoming	CCI-Excluded	67	42,855	17	18	32	West flank of N. Butte
Wyoming	CCI-Thunderbird	596	274,715	418	127	78	
Wyoming	Poison Spider	45	42,550	29	16		Thick anomaly @ 1100'-1300'
Wyoming	Pine Mtn.	5	4,053	5			
TOTAL		725	397,823	479	163	110	

CVX 00798

### III. OPERATIONS

#### New Mexico

##### Ignacio Chavez Grant, McKinley Co., GOC/SOC - 33 1/3%

Negotiations have been completed with Northern Minerals whereby the Joint Venture will receive electric logs through the Jurassic Morrison Formation from holes drilled on lands adjacent to the Ignacio Chavez Grant. It is felt that this information will expand the partnership's knowledge of the surrounding subsurface geology and will help delineate those areas within the western portion of the Grant with the highest ore potential.

Pioneer Nuclear (Joint Venture Operator) has hired a new drilling contractor. When the rig can be moved in, Hole No. IC-5 will be re-entered and completed which was abandoned by the former contractor.

Hole No. IC-9 was approved by the B.L.M. and drilling is in progress on this location. Pioneer's last report indicated the hole is now at a depth of 1000 feet. The estimated total depth is 4200 feet below the surface. The drilling cost for this hole is expected to be approximately \$18,600.00.

#### Wyoming

##### Poison Spider Project, Natrona Co., GOC/SOC 100%

Because of the doubtful availability of drilling rigs and logging equipment during the summer months, a decision was made to begin our 1974 exploratory drilling program in February. Six holes were completed during the month for a total 11,936 feet. No abnormal drilling problems were encountered.

Drill Hole No. 25-1 encountered a radioactive anomaly from 343 feet to 354 feet below the surface. The anomaly contained 11 feet of .01%  $eU_3O_8$  and a peak grade of .05%  $eU_3O_8$ .

Drill Hole No. 26-1 encountered three feet of .03%  $eU_3O_8$  from 432-435 feet below the surface. No additional radioactive anomalies were encountered in the deeper host beds.

Drill Hole No. 35-1 contained a slightly radioactive anomaly in a sand at a depth of 1300 feet below the surface. The anomaly peak was approximately  $3\frac{1}{2}$  X B.G.

Drill Holes 23-1, 24-1 and 27-1 contained no favorable radioactive anomalies.

The rigs are presently drilling on two new locations in the generally favorable area.

CVX 00799

IV. GENERAL

Messrs. R. P. Barnes and R. D. Cypert, Jr. attended Schlumberger's logging school in Salt Lake City on February 12th.

The Weld County evaluation report has been completed and submitted to the District Exploration Manager.

V. LAND ACQUISITION

Uranium leases were recently obtained on 5,520 acres of state lands in the Washakie Basin of Wyoming. The land was primarily leased on the basis of uranium found in drill cuttings obtained from a water well in the general area.

VI. SCOUTING

New Mexico

Continental Oil Company has moved their rigs from their Crown Point, New Mexico, properties while their legal staff finalizes an agreement with the Bureau of Indian Affairs so that the mineralization trending into the residential section of town can be drilled. Prior to this agreement, Conoco held the minerals but could not explore these lands without showing reasonable expectation of intersecting mineralization.

They (Conoco) are using some of their rigs at present for completing their drilling requirements on properties acquired from the Laguna Indians in 1970. They are continuing to define the ore grade mineralization present in this tract although it is rumored that neither sufficient tonnage nor grade is believed present to permit production from 800 to 1000-foot depths.

Kerr-McGee is reportedly following high grade mineralization on the east flank of the Mt. Taylor volcanic field. If this is true, Kerr-McGee is exploring the farthest north occurrence of ore grade Westwater mineralization in the Rio Puerco area to date, and strengthens the possibility that the ore trend projected from Ambrosia Lake trends more easterly under the Mt. Taylor volcanic field.

*Carl H. Smith*

CHS-RDC:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00800



TO: Mr. Robert P. Blanc ✓  
 FROM: Cecil H. Smith  
 SUBJECT: Monthly Progress Report - January 1974  
 Uranium Exploration

MINERALS DEPARTMENT	
FEB 1974	
R. P. BLANC	<i>RPB</i>
<del>C. H. SMITH</del>	<i>CHS</i>
S. MUESSIG	<i>SM</i>
D. A. NICHOLS	
K. M. REINH	<i>KMR</i>
L. C. ROY	
J. J. WILLIAMS	
FILE	

# I ADMINISTRATIVE

Mr. Jon Zeisloft resigned during the month to accept employment with another company exploring for uranium in the United States.

## II DRILLING SUMMARY

### MONTHLY DRILLING

January 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min*	POI**	
New Mexico	Church Rock	1	2,390		1		4.0 - .12%e U <sub>3</sub> O <sub>8</sub> @ 2070'
New Mexico	Ignacio Chavez	2	6,405	1	1		Trace
Wyoming	Thunderbird	13	7,880	10	2	1	6.0 - .11%e U <sub>3</sub> O <sub>8</sub> @ 639'
TOTAL		16	16,675	11	4	1	

### 1973 TO DATE DRILLING

THROUGH JANUARY 1974

State	Project	Holes	Footage	Mineral Character			Remarks
				Barren	Min.	POI	
New Mexico	Church Rock	2	4,830	1	1		
New Mexico	Ignacio Chavez	7	19,120	6	1		
New Mexico	Chico	3	9,700	3			
Wyoming	CCI-Excluded	67	42,855	17	18	32	West Flank North Butte
Wyoming	CCI-Thunderbird	516	245,420	361	104	51	
Wyoming	Poison Spider	39	30,614	23	16		Thick anomaly @ 1100' - 1300'
Wyoming	Pine Mtn.	5	4,053	5			
TOTAL		639	356,592	416	140	83	

\*Mineralized Hole < 4' - .05%e U<sub>3</sub>O<sub>8</sub>

\*\*Potential Ore Intercept < 6' - .10%e U<sub>3</sub>O<sub>8</sub>

We have added a drilling summary to our monthly report to assist in evaluating exploration results. The classification of potential ore intercepts does not infer economic minable material but does segregate significant mineralization in our classification.

CVX 00801

### III OPERATIONS

#### NEW MEXICO

##### Church Rock Project, McKinley County GOC/SOC - 100%

The exploration hole, 36-2, drilled in January encountered four feet of .12%  $U_3O_8$  within a fine-grained sandstone of the Brushy Basin member of the Morrison Formation at a depth of 2070 feet below the surface. The Westwater sandstones were barren and oxidized red which is an unfavorable characteristic.

##### Ignacio Chavez Grant, McKinley County GOC/SOC - 33 1/3%

Two holes were completed on this project during January. Hole IC-7 contained a three foot zone within the Brushy Basin member with a three-times normal background gamma radiation. Although this zone is thin and weak, it is encouraging to note that it is the most basinward occurrence of anomalous radioactivity known within the Morrison Formation in this portion of the San Juan Basin.

#### WYOMING

##### CCI-Thunderbird, Cambell County GOC/SOC 24 1/2%

During January the past drilling results were reviewed and Getty-Skelly elected to relinquish approximately 40,000 acres in this prospect. Cleveland Cliffs, Pioneer Nuclear and Texas Eastern Nuclear elected to continue exploration of the lands relinquished.

A 1974 budget of \$200,000, GOC/SOC share \$49,000, was approved for the 17,000 acres retained by Getty-Skelly. This year the drilling will be concentrated in three areas; South Greasewood Creek, North Rolling Pin and DA 53. Each of these areas are known to be well mineralized. The objective of this years drilling is to determine the economic significance of this mineralization.

The January drilling was for assessment credits on small claim blocks. Thirteen holes were drilled, with three of the holes being well mineralized. The best intercept was six feet of .11%  $U_3O_8$  at a depth of 639 feet.

#### IV SCOUTING

During January it was reported that Exxon was staking a large area about 30 miles southeast of Jackson, Wyoming. Ground checks indicate there is an excess of 750 claims.

Inexo has a uranium deposit of about 2 MM lbs.  $U_3O_8$  on a school section west of our Pumpkin Buttes area in Wyoming.

NEWBETH, a joint venture between Bethlehem Steel and Nuclear Dynamics has been developing a uranium deposit in the Lower Lance / Fox Hills Formations at the eastern Powder River Basin. Reports are that 206 of the development holes contain mineralized material (average thickness six feet) that averages .04%  $U_3O_8$  at depths ranging from 300 ft to 700 ft below the surface. One

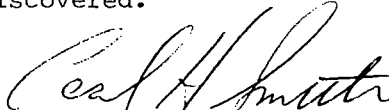
CVX 00802

was reported to contain 29 feet of .25%  $U_3O_8$ . Further drilling will be required to evaluate the significance of this discovery.

Mobil Oil and Gulf Oil have staked between 3,000 and 4,000 claims in the area.

A major company (Exxon?) has approached the U. S. Forest Service for a permit to explore for uranium on 38,000 acres in the Little Missouri River National Grassland in western North Dakota. The lignitic coals of this area contain significant quantities of uranium.

TVA is reported to be accepting offers to negotiate uranium exploration contracts. They will finance the exploration expenditures and advance \$1.50/lb.  $U_3O_8$  for the reserves discovered.

  
Cecil H. Smith

cc. McKinley  
Carlton

CVX 00803

Salt Lake City, Utah  
February 11, 1974

MINERALS DEPARTMENT	
FEB 1974	
R. P. BLANC	✓
C. J. WENDERS	✓
S. MOESSIG	✓
B. A. NICHOLS	✓
K. M. REIM	✓
L. C. ROVE	✓
J. F. WILLIAMS	✓
FILE	

TO: Mr. Robert P. Blanc ✓  
FROM: Cecil H. Smith  
SUBJECT: Monthly Report, January 1974  
Metals Group

*Circulate*

#### SUMMARY

Diamond drilling was carried out on two separate projects in Tennessee this month; trace amounts of zinc were encountered in one of the two holes drilled. No field activity was carried out on the Rawhide, Nevada; Mercur, Utah or Cripple Creek Colorado gold projects; 1973 Summary Reports of these projects are currently in preparation.

Activity on the Boss-Bixby joint venture during January was restricted to 1) the preparation, by Azcon, of a final report on the project and 2) an examination of the core and all other data by Cerro Mining Corporation at the invitation of Getty Oil. Cerro's objective in making this examination was to determine whether they wished to make a joint venture proposal for further exploration of this deposit to the project partner. Subsequent to this examination the Consolidated Goldfield management of Azcon elected to place the property "on the shelf" rather than seek another partner; Getty Oil then informed Cerro that the property was not available.

Activity on the Wisconsin-Michigan joint venture for January was limited to the completion of one drill hole for the massive sulfide program and the collaring of one diamond drill hole in the Round Lake vanadium deposit. The massive sulfide portion of the Wisconsin-Michigan joint venture program was terminated during January following the completion of the last drill hole in the Crystals Falls, Michigan project area. Getty Oil has also elected to go to a non-participating position during this phase of the Round Lake development program.

Five drill holes were completed on Covered Areas Project (C.A.P.) joint venture program in Arizona during January; results of this drilling were generally negative.

#### PROJECT REVIEW

##### A. ZINC PROGRAM - TENNESSEE

Drilling was carried out in the New Hope (Celina) and the Gordonsville Project areas; land acquisition was carried out in the Gordonsville and Mulberry-Newmarket project areas. A Middle Tennessee zinc submittal from Dresser Minerals was received and evaluated.

##### 1. New Hope Project, Clay-Jackson Counties, Tennessee

Drill hole 704-1 located in the New Hope project area (see enclosure 1) was completed to a depth of 2024 feet. This hole contained traces of zinc through-

CVX 00804

out the interval from 1500 to 1685 feet; one zone from 1595 to 1610 feet was visually estimated to contain .25% Zn. The zinc mineralization occurred with a dolomite gangue and exhibited both replacement and open space filling textures. Dissolution features i.e. crackle breccia and secondary recrystallization features were moderately abundant in the upper of Mascot (Formation) portion of the Lower Ordovician interval drilled. However, the absence of thick limestone equivalents suggests that if a major dissolution zone is present in this local area it lies 1000-5000 feet to the east of hole 704-1.

## 2. Gordonsville Project, Smith County, Tennessee

Drill hole 533-1 located in the Gordonsville project area (see enclosure 2) was completed to a depth of 1814 feet this month. Although this hole contained no visible zinc mineralization several thick zones of rubble and crackle breccia were encountered in the Mascot and upper Kingsport sections. Voids and fractures in this breccia were healed by coarse, crystalline calcite gangue. The rock preparation and lithology in this hole is very similar to that encountered in hole 506-1. Drill holes 505-1 and 504-1 (see enclosure 2 for collar locations) will be drilled during February 1974.

Acquisition of an additional 2500 acres contiguous to and southeast of the present Gordonsville tract was about one-half complete by the end of the month. Acquisition of the remaining land in the Mulberry-Newmarket project area in south central Tennessee was nearly complete by January 31, 1974.

## 3. Allred, Tennessee Submittal

A "farm out" proposal covering a prospective zinc area was received from Dresser Minerals this month. This area is centered around the town of Allred, Tennessee, located some 40 miles northeast of Gordonsville. Inspection of the core and other data indicates that the potential for a major deposit has been significantly reduced by the existing Dresser drilling. Consequently, the proposal was turned down.

## B. COPPER PROGRAM

### 1. Cornwall Project, St. Genevieve County, Missouri

Approval was received in January to begin an exploration program in the Cornwall mine area in St. Genevieve Co., Missouri. Land acquisition will start in early February, 1974.

### 2. Boss-Bixby Joint Venture, Iron County, Missouri

During January two geologists from Cerro Corporation at the invitation of Getty Oil examined the drill core and other data pertaining to the Boss-Bixby project with a view to making a proposal to take over the exploration of this copper deposit. However, in mid January the Consolidated Goldfields management of Azcon reversed their previous position and elected to place the deposit "on the shelf" at this time. Subsequently Getty Oil notified Cerro Corporation that the Boss-Bixby deposit was not available. An economic evaluation of the lead-zinc exploration potential of the Boss-Bixby area has been started.

### 3. Wisconsin-Michigan Joint Venture

The final drill hole was completed in the Crystal Falls, Michigan area in early January with negative results. Subsequently it was agreed by

CVX 00805

Getty Oil and International Minerals Company that the massive sulphide portion of the joint venture would be terminated.

During January I.M.C. presented a \$200,000 development drilling program for the Round Lake vanadium deposit as the first step in the development of an integrated vanadium, titanium slag, pig iron (mining and processing facility). Because of the high risk entailed in the development of the necessary high-grade vanadium reserves, Getty Oil elected not to participate in this phase of the program which is scheduled to be completed in July-August 1974. Upon completion of this work a major feasibility report will be prepared. One hole was started in the Round Lake deposit in January; the establishment of adequate drill stations on the ice of Round Lake has been difficult and progress is slower than expected.

4. C.A.P. Joint Venture, Arizona-New Mexico

Two project areas, Wickenburg and Dos Cabezas, were drilled during January. Field activity was carried out on several other areas and two project areas were recommended for abandonment.

Two drill holes were complete to depths of approximately 300 feet on the Wickenburg, Arizona area project. Both holes penetrated Precambrian (?) bedrock at shallow depths beneath the gravel cover. Slightly anomalous copper values were found in both holes and further drilling is planned.

Three holes were completed on the Dos Cabezas project area near Wilcox, Arizona with negative results. These three holes range from 700 to 800 feet in depth. Further drilling is planned nearer to Wilcox to check the gravel covered areas around a very small, isolated and previously explored outcrop exhibiting porphyry copper-type mineralization.

The Nogales project area located south of Tucson and the Globe project area located east of Globe, Arizona were recommended for abandonment this month.

C. GOLD PROGRAM

1. Rawhide Project, Mineral County, Nevada

The 1973 report is in preparation on this project; no new data is available.

2. Mercur Project, Tooele County, Utah

The 1973 report is in preparation on this project. Initial trace element work just completed suggests that a positive correlation exists between the distribution of anomalous quantities of gold found in Getty Oil drill holes and the elements arsenic, thallium, copper, zinc and iron. This knowledge will be useful in guiding any future drilling programs.

3. Cripple Creek, Colorado

The 1973 report is in preparation on this project. Trace element work recently completed indicates that areas of anomalous gold mineralization are co incident with anomalous concentrations of K<sub>2</sub>O (potassium). Such data will be useful in guiding future prospecting and drilling programs if additional work is carried out in the district.

CVX 00806

*Paul H. Smith*

Salt Lake City, Utah  
January 15, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY REPORT, DECEMBER, 1973  
METALS GROUP

MINERALS DEPARTMENT	
JAN 13 '74	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDELT	
H. LAURSEN	
S. L. LARSEN	
D. A. LARSEN	
F. J. LARSEN	
K. M. LARSEN	
L. M. LARSEN	
F. M. LARSEN	
R. M. LARSEN	

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### SUMMARY

The entire effort of the metals group during the month of December was directed toward field mapping in Nevada and supervision of drilling programs in Colorado, Utah and Tennessee.

At the Rawhide, Nevada, project, significant progress was made on the geologic mapping. Assays for two of the three core drill holes were received; the best values were .04 oz. Au; .60 oz. Ag for the top 50 feet of one hole.

At the Cripple Creek, Colorado, project, drilling was terminated following the completion of 13 "air trak" drill holes. Assays for five of the 13 holes were received; no significant gold values were found.

At the Mercur, Utah, project, the last 12 rotary drill holes were completed; assay results for most of these holes are not yet available. Geologic mapping and sampling of surface cuts was also carried out.

In Tennessee, one core hole was started on the New Hope project; natural gas problems have slowed its progress. Four core holes were completed and/or started on the Gordonsville project; one hole intercepted six feet of sphalerite mineralization assaying 6.0% Zn; another encountered a major dissolution breccia zone, a third contained sphalerite mineralization over an interval of 200 feet and the fourth hole contained a one-foot interval of sphalerite mineralization visually estimated to assay 10% Zn. During December the Getty Oil-New Jersey Zinc Brimstone joint venture was terminated; no activity was undertaken on the Celina joint venture. Acquisition of leases in the Mulberry-New Market project, as of December 31, totaled 5000 of the 8000 acres which we anticipate acquiring.

A report recommending acquisition of land and the drilling of 16 holes at the Cornwall copper prospect area in St. Genevieve County, Missouri, was forwarded to Los Angeles this month.

CVX 00807

I. PROJECT REVIEW

A. GOLD-SILVER PROGRAM

1. Rawhide Project, Mineral County, Nevada

Geologic mapping was continued during the period. Two major intrusive areas have been identified; in addition, the stratigraphy of the complex sequence of volcanic extrusives is being interpreted.

We have received assay results for two of the three assessment holes core drilled in 1973. One hole (RWG-1) was mineralized with .04 oz. Au/ton and 0.60 oz. Ag/ton.

The core from both holes was "split" by a diamond saw; assays of the sludge collected from RWG-1 representing the top 50 feet averaged .05 Au/ton and 13.0 Ag/ton. Comparison of the weight measurements of the core split and sludge indicate approximately five percent of the values were lost in the sludge. Further core drilling at Rawhide will include the installation of a sludge collection system.

During December we also fenced and posted about 60 open shafts and 40 open adits. The purpose of this work was to warn off and protect public visitors to the Rawhide ghost town.

2. Mercur Project, Tooele County, Utah

During the month 12 rotary holes were completed on the Marion Hill area. This completed our planned program of 20 holes. To date, we have received assay data on 13 holes. The remaining assay data should be available by the end of January.

A limited amount of surface sampling and geologic mapping was done during December. The initial mapping indicates that Marion Hill is more structurally complex than was previously thought. Although a study of the rotary drill cuttings will provide some stratigraphic information, it will not be possible to place the samples obtained from the present drilling in a precise stratigraphic framework until completion of further surface mapping.

The U. S. Bureau of Mines has indicated their willingness to make mineralogic and metallurgical studies on mineralized material from Mercur. This study would be at no cost to Getty except for furnishing the mineralized samples to the Bureau. A meeting will be arranged late in January to discuss the specific research they plan to perform on our Mercur samples.

3. Cripple Creek Project, Teller County, Colorado

Adverse weather forced termination of the drilling program on the Rittenhouse (Dooley) claim prior to completion of the planned shallow drilling program. Thirteen holes were drilled this month with an "air trak" drill to

CVX 00808



depths ranging from 20 to 70 feet. Recovery of the drill cuttings has generally been fair to poor due to the intensely fractured and cavernous nature of the near-surface bedrock. Assay data on this drilling will not be available until mid-January, 1974.

B. ZINC PROGRAM

1. New Hope (Celina) Project, Clay-Jackson Counties, Tennessee

Approximately 5,700 acres were picked up during November in Clay and Jackson Counties around and north of the Brimstone joint venture area. Although the original intent was that New Jersey Zinc would participate 50:50 with Getty Oil in these lands under the existing Celina joint venture, they declined when offered. Consequently this land has been grouped into an exploration tract called New Hope.

The first drill hole (704-1) to be drilled in the New Hope area was collared during December. This hole site was selected on the basis of the favorable ground magnetic data and the location of several nearby Exxon drill holes reported to contain zinc. By month's end, this hole was approximately 475 feet deep; numerous high-pressure gas pockets have been encountered which have severely delayed the hole progress. Any future drilling in this area will employ the use of a rotary drill for the near surface portion of the holes. The use of mud and a larger diameter hole results in much less delay time in the 0-600 interval where gas is normally encountered.

2. Brimstone Joint Venture, Jackson-Clay Counties, Tennessee

Examination of the data obtained from the 11th and final hole drilled on the Brimstone tract combined with our earlier analysis following completion of the contractual ten-hole program indicated that the property should be dropped. New Jersey Zinc was notified of our decision in December to abandon this joint venture. All contractual obligations under this joint venture had been completed by the time the joint venture was terminated.

3. Celina Joint Venture, Clay-Jackson Counties, Tennessee

No activity occurred on this Getty Oil-New Jersey Zinc joint venture during December. New Jersey Zinc as operator has been verbally requested to prepare a work program for the year 1974.

4. Gordonsville Project, Smith County, Tennessee

Three core holes and three rotary sleeve holes were completed during December; the fourth and final core drill hole in the 1973 program was within 100 to 200 feet from its completed depth and the fourth rotary sleeve hole was one-half completed. Trace to economically significant quantities of zinc mineralization were encountered in three of the four core holes.

Drill hole 506-1 (see enclosure) was the first Getty Oil hole collared on the Gordonsville project. This hole encountered 200-300 feet of very well developed rock matrix breccia in which the void space was largely cemented by coarse crystalline calcite but without associated zinc mineralization. Although the absence of the zinc in the calcite gangue is disappointing, it is significant that we have such an extensive collapsed breccia column present on the Gordonsville property. Our examination of the Elmwood Mine as well as the ore intersections pulled by New Jersey Zinc at its Cumberland project indicates that such profound dissolution features are necessary to produce major ore bodies.

Hole 510-1 contains numerous stratiform zones of dissolution breccia with traces of zinc mineralization throughout a 200-foot interval. The third hole, 521-1, also contains numerous stratiform zones of dissolution breccia. At a depth of 1200 feet (some 300-350 feet below the Middle Ordovician unconformity), this hole contained six feet of significant sphalerite mineralization assaying 6.0% Zn (undiluted). Hole 519-1, the fourth hole contained less ground preparation than the first three holes, i.e., less limestone dissolution breccia. However, one inch of sphalerite mineralization visually estimated to be equivalent to 10.0% Zn over one foot occurred at the same stratigraphic horizon as that mineralization found in hole 521-1.

Additional ground magnetic work south and east of the current drilling has refined the magnetic picture of the Gordonsville area and shows that part of the favorable Elmwood-Gordonsville magnetic ridge extends at least some one to two miles further to the southeast than was previously known. Consequently, a program to acquire 1500-2500 additional acres along this trend was initiated in December.

#### 5. Mulberry-Newmarket Project, Lincoln County, Tennessee

Land acquisition over 22 separate drill target areas was about two thirds complete by the end of December. To date, some 5,000 of the projected 8,000 or so acres covering some 14 of these targets has been obtained.

### C. COPPER PROGRAM

#### 1. Cornwall Copper Project, St. Genevieve County, Missouri

A report on the Cornwall stratabound copper prospect, located east of the "Old Lead Belt" of southeastern Missouri was submitted during December. This report recommends the optioning of 5,000 to 10,000 acres around the prospect area and the drilling of some 16 drill holes at a programmed expense cost of \$67,000 to test the merits of this prospect area. The target in this area is a major stratabound copper deposit associated with limestone dissolution breccias in rocks equivalent in age and lithology to the Lower Ordovician Mascot Formation of Middle Tennessee.

CVX 00810

2. Boss-Bixby Joint Venture, Iron County, Missouri

During the month we initiated discussions with Cerro Corporation concerning possible farm-out arrangements. Cerro has indicated they would be willing to complete the underground exploration of this property to determine the economic potential in consideration of receiving a 50 percent interest in the property. This tentative proposal has been submitted to the other venturers for consideration and suggestions.

3. C.A.P. Joint Venture, Arizona-New Mexico

Drilling activity on this project was suspended during December but will resume in 1974 when 1974 budget funds are available.



CHS:alr  
Encl.

cc: Mr. P. E. Carlton

CVX 00811

**PARTIALLY SCANNED  
OVERSIZE ITEM(S)**

See document # **2167983**  
for partially scanned image(s).

**CVX 00812 - CVX 00813**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000

Salt Lake City, Utah  
January 15, 1974

MINERALS DEPARTMENT	
JAN 13 '74	
R. F. BLANT	
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F. J. NORDAK	
R. M. REYN	
L. C. ROBE	
B. L. WISEMAN	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH

SUBJ: U. S. URANIUM EXPLORATION REPORT  
DECEMBER, 1973

GENERAL

The Albuquerque uranium exploration office was closed during December. The present and planned 1974 U. S. Uranium exploration staff will all be located in Salt Lake City and will include four exploration geologists.

PROJECT REVIEW

1. Cliffs-GOC/SOC Joint Venture, Powder River Basin, Wyoming

The 1973 exploration program on the "excluded acreage" was completed during the month. This drilling accomplished the following goals:

- (a) Phase II exploration of the uranium mineralization along the west flank of North Butte where 2-4 MM pounds of uranium is inferred.
- (b) In-fill drilling on the Greasewood Creek deposit.
- (c) Core holes required for our patent application.

During 1973 there were 67 holes completed totaling 44,095 feet.

2. Cliffs-Thunderbird-GOC/SOC Joint Venture, Powder River Basin, Wyoming

The 1973 exploration program on the "Thunderbird" acreage was completed during the month. Based on the drilling results, Getty/Skelly elected to relinquish approximately 40,000 acres and will retain approximately 17,000 acres in 1974.

During 1973 there were 502 holes completed totaling 237,130 feet.

CVX 00814

3. Poison Spider Project, Natrona County, Wyoming

The 1973 evaluation report of the Poison Spider project is in progress and should be completed by the end of January.

4. Ignacio Chavez Grant, McKinley & Sandoval Counties, New Mexico

Pioneer Nuclear, operator, reports that the following footage was drilled during December:

No. of Holes	3
Footage	7,043
Radioactive anomalies	None

During 1973 there were six holes totaling 14,612 drilled on the Ignacio Chavez Grant.

5. Church Rock Project, McKinley County, New Mexico

One hole totaling 2440 feet was completed during December. No significant uranium mineralization was encountered.

SCOUTING

1. California - Union Pacific Mining Corporation has an active drilling program in the Coso area. This program has been going on for several years but the significance of the mineralization in the area is not known at this time.

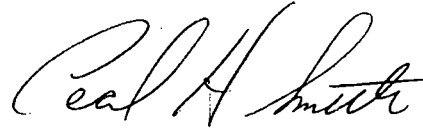
2. Colorado - Union Pacific Mining Corporation is reportedly planning a \$100,000 drilling program on U.P. acreage within the former Weld County Project area. They are also doing hydrogeochemical surveys in Adams and Washington Counties (Denver Basin), Colorado, exploring the Cretaceous Fox Hills Formation.

3. Nevada - Union Pacific Mining Corporation is reportedly drilling a uranium porphyry play in granite of the Round Mountain area. Union Pacific, Newmont and others are reportedly acquiring land and drilling the phosphatic uraniferous lake beds in the Tonopah area.

4. Oklahoma - Mobil Oil Company recently completed a large uranium test drilling program in the pre-Tertiary of Oklahoma.

5. Wyoming - Union Pacific Mining Company completed over 400 holes on their Nine Mile Lake prospect (approximately 10 miles north of Casper, Wyoming) testing "roll front" mineralization in the Cretaceous Teapot Formation.

South of the Gas Hills, and south of the Beaver Rim escarpment, American Nuclear reportedly was searching for buried paleochannel sandstones using the seismic refraction method. Their geophysical surveys led to a drilling program.

A handwritten signature in cursive script, appearing to read "Paul H. Smith".

CHS:alr

cc: Messrs. P. E. Carlton  
G. E. McKinley

CVX 00816

Salt Lake City, Utah  
November 9, 1973

MINERALS DEPARTMENT	
NOV 12 '73	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MUESBIG	
D. A. NICHOLS	
F. J. NGWAK	
K. M. REIM	
L. C. ROYE	
B. L. WISEMAN	
FILE	

TO: MR. CECIL H. SMITH  
FROM: R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - OCTOBER, 1973

### URANIUM

#### PERSONNEL

The resignation of Mr. Paul R. Fullmer, Field Exploration Foreman, effective September 15, 1973, was inadvertently omitted from the September Report.

#### OPERATIONS

NEW MEXICO (Reported by William M. Pennell)  
Pena Ranch, McKinley County

Although the discovery potential of the Pena Ranch was attractive, budget limitations precluded our acquiring an interest in Kerr-McGee's holdings. The geologic interpretations of the data supplied by Kerr-McGee have aroused some interest in nearby lands and evaluation of these areas is underway.

Everest Exploration's Crown Point Property  
McKinley County

The uranium encountered on Everest's 1400-acre land block is redistributed mineralization associated with an orange-gray interface within the Jurassic Westwater sandstones. Previous drilling has precluded the presence of any large ore body and Everest was notified of our decision to reject the submittal.

Ignacio-Chavez Grant, McKinley and Sandoval Counties

At the end of the month, drilling was commenced on a 10-hole drilling program. Prior to start-up, all aspects of the Bureau of Land Management regulations were satisfied including environmental statements and establishment of hole plug requirements.

CVX 00817



WYOMING

Poison Spider Project, Natrona County

Drilling for 1973 was completed on this project. Interpretation of subsurface drill hole data is in process.

Several of the drill holes encountered mineralized zones, but none of commercial value.

Pine Mountain Area, Natrona County

Five holes for a total footage of 4053 feet were drilled on this project during October. Gamma Ray logs run in these holes indicated no favorable radioactive anomalies.

| No additional drilling for 1973 is planned for this project.

Beaver Divide, Fremont County

Three holes for a total footage of 3225 feet were drilled on this project during October. The Gamma Ray logs from these holes indicated no favorable uranium mineralization.

No additional drilling is planned for this project for the remainder of 1973.

*R.D. Gypert Jr.*

APPROVED

*Carl H. Smith*

RDC,JR:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

CVX 00818

URANIUM

MONTHLY SUMMARY SHEET  
SALT LAKE CITY OFFICE

OCTOBER, 1973

[illegible]

**CVX 00819**

w.f.  
→ file

Salt Lake City, Utah  
November 7, 1973

TO: R. P. BLANC

FROM: C. H. SMITH

SUBJECT: PROGRESS REPORT - AUGUST-SEPTEMBER-OCTOBER, 1973

The majority of the metals groups' effort during August, September and October has been directed towards both gold (silver) acquisitions and projects in the western U. S. and zinc (copper) exploration in the U.S. Midcontinent region.

GOLD/SILVER

Rawhide, Nevada

Four drill holes RWG-1, 2, 3 and 4 were completed to depths of 181, 200, 105 and 60 feet respectively on the Weiler-Bishop claim blocks during August and September, 1973. These holes were drilled to satisfy assessment requirements; drill holes RWG-1, 2 and 3 were cored in the central mineralized area and RWG-4 was drilled as a water well in an outlying area held for its placer potential. Core from drill hole RWG-1 has been split and will be sent for assay immediately; core from drill holes RWG-2 and 3 will be sent to Salt Lake about November 12, 1973; splitting and assaying should be completed by late November. All core from this project is being sent to Union Assay of Salt Lake for fire assay. Geologic mapping will be continued in the Rawhide area at least through the end of November 1973. The preliminary copy of a 1" = 300' topographic map which will be used as the geologic map base has been received.

Cripple Creek, Colorado

Drilling was started on the Rittenhouse claim group on October 15, 1973. To date 11 holes have been drilled and 6 completed to the targeted depth. These holes are being drilled to depths of 50 feet on a 100 x 200 foot grid using a 'airtrak' percussion rig with a 600 cfm air supply; the objective of this drilling is to get a "quick and dirty" near-surface sampling of the bedrock underlying the alluvial material which covers most of the claim group. Strongly fractured ground immediately below the bedrock-alluvial contact has severely hampered efforts to obtain adequate bedrock samples. Assay results to date show nil to trace results for most holes; one hole however contained values in the .02-.03 oz. Au/ton range while another hole contained one 5 foot interval assaying .10 oz. Au/ton. The samples are being submitted to Skyline Laboratory of Denver for fire assay. A drill hole location map for this project will be furnished in the near future. Inclement weather will increasingly affect the rate of drill hole completion on this project. However, pending successful conclusion of the drilling problems, drilling should be completed by late December.

CVX 00820

### Mercur, Utah

Drilling was started on the Marion Hill portion of the Geyser-Marion claim block on October 31, 1973. A Gardner-Denver 1500 rig with a 250 psi down the hole hammer backed-up by a 1200 cfm air supply is in use. To date three holes H-1, 2 and 3 have been drilled; drill holes H-1 and H-3 have been completed to depths of 345 and 265 feet respectively. Drill hole H-2 was started in three different locations and advanced to depths of 40, 45 and 145 feet before being abandoned due to lost circulation. Samples of the cuttings from the first three holes have been submitted to Union Assay in Salt Lake for fire assay, results should be available by November 15, 1973. Inclement weather will hamper drilling progress but serious delays should not occur before the end of November. A drill hole location map will be prepared later this month when the new topographic maps of the central Mercur district become available. Dr

Drill road and site construction is anticipated to be finished by November 10, 1973. Some 50-60 claims have been staked by Getty Oil at the mouth of Mercur Canyon. The principal objective of this staking is to provide land for tailings and a mill site.

The USBM has begun initial petrographic studies on selected specimens of drill core obtained by Getty Oil from the 1969 Newmont exploration program at Mercur. The USBM has also indicated a strong interest in conducting new metallurgical research on Mercur ore for Getty Oil Company.

Recently an offer was made by Getty Oil to Combined Metals to option the Combined Metals interest in the Combined Metals-Steen claim block at Mercur. This offer was accepted by the trustee for Combined Metals. The decision was subsequently contested by two of the Combined Metals shareholders. Arguments for and against the trustee's decision were heard in the District Court for Nevada at Las Vegas on November 2, 1973. Indications are that the court will return a ruling favorable to our interest, i.e. the trustee's action will be approved by the court.

### COPPER

#### Hideaway (Wassuk Range), Nevada

A down-the-hole and surface I.P. survey was carried out during October at the Hideaway copper prospect. The measurements obtained indicate that the pre-Tertiary "basement" throughout most of the prospect area not already explored by drilling lies at depths in excess of 2000-3000 feet. A final report by the Getty Oil geophysical consultant should be available by the end of November. At that time a recommendation will be made to drop most of Getty Oils interest in this prospect area.

#### Covered Areas Program Joint Venture-Arizona

Two areas, Brockman Hills, New Mexico and Wickenburg, Arizona are currently being drilled. Drilling problems continue to plague the Brockman project; pyritic mineralization was encountered in one of the three holes drilled to date at the Wickenburg area. It is anticipated that a third drilling project will start in the Slewfoot area near Prescott, Arizona this week.

CVX 00821

### Wisconsin/Michigan Joint Venture

Three massive sulfide drill targets have been selected in the Crystal Falls area following completion of the ground geophysical surveys. These targets will be tested by December 31, 1973.

No further action has taken place on the E-14 E. M. anomaly located near Wasau, Wisconsin following the completion earlier this year of two drill holes containing weak copper mineralization. To date IMC has been unable to acquire a key property necessary for further exploration of the E-14 anomaly. A recent field investigation by Getty Oil indicates that it is necessary for Getty Oil or someone other than I.M.C. to negotiate for this land. However, IMC has not requested Getty Oil to proceed to acquire this land for the joint venture. Subsequent to the completion of the two holes on the E-14 anomaly the geophysical consultant to the joint venture, John Boniwell, reinterpreted the existing geologic and geophysical data for the area. He suggests that other potential drill targets may be present particularly in the vicinity of the E-12 anomaly located one mile north of E-14 and that further ground follow-up work is warranted. To date IMC has not reported that they have taken action on the Boniwell recommendation.

A final report by Arthur McKee has been submitted to IMC on the proposed Round Lake, Wisconsin vanadium mine-mill-chemical smelter complex. The latest IMC summaries of this data show that with a 2000 tpd mine and a \$3.50/lb. price for the contained vanadium in FeV, an open-pit operation could have a 12% DCFROR and a 10 year payout. To date all IMC market studies show that the existing short-term U.S. vanadium market at a normal 3-5% growth rate can probably absorb only one-half the vanadium that such a complex would produce. In addition to the marketing uncertainty it seems likely that a 10 year pay-out on a chemical processing facility would be unacceptable to most corporations.

### Boss-Bixby, Missouri

The final hole of the current drilling program, S-7, was at a depth of 1900 feet on November 5, 1973. Fairly strong magnetite with interesting amounts of chalcopyrite mineralization are reported to be present in selected intervals of the Precambrian rocks.

The Boss-Bixby lead-zinc study has been completed and copies forwarded to all participants. This study identifies several prospective areas which have the ultimate potential for modest tonnages of lead/zinc ore. A recommendation was made to farm out the lead/zinc exploration potential to a company already engaged in lead/zinc mining in the area.

### ZINC/LEAD

### Brimstone Joint Venture, Tennessee

The eleventh hole was completed on the Brimstone tract in October. This hole did not intersect any mineralization nor was the expected dissolution thinning of a key Mascot interval encountered. This hole completes the Getty Oil evaluation of the Brimstone tract and New Jersey Zinc will be notified of our decision to drop all interests in this ground sometime during November, 1973. We are attempting to secure permission from New Jersey Zinc to transfer one small land parcel, containing one of the better mineralized intercepts found on the Brimstone tract, into the Celina joint venture.

CVX 00822

To date no exploration activity has been carried out on the Celina Project this year. However, several thousand acres, the bulk of which is situated adjacent to an area in which Exxon is reported to have just completed an ore hole (i.e. Block D shown on earlier maps) has been added to the projects land holdings. New Jersey Zinc has reported that they are preparing a 1973-1974 Celina work program. Getty Oil is anticipating drilling at least one joint Celina hole with New Jersey Zinc in 1973.

Mulberry-Newmarket, Tennessee; Alabama

Approval was received to acquire properties in the Mulberry-New Market prospect area in southern Tennessee (see earlier memos for location). Attempts to secure options to mineral rights at the rate of \$6.00/acre for a 5 year option period have not been successful. Consequently, it now looks as though all lands must be acquired under the existing lease/rental arrangements used elsewhere in central Tennessee. The acquisition strategy in the Mulberry-Newmarket area consists of picking up 200-600 acres blocks covering the 22 proposed drill hole sites rather than attempting to secure a solid land position. The principal objective of this strategy is to conserve funds; no lands have yet been acquired.

Gordonsville, Tennessee

Approval has been received to collar four drill holes on the Gordonsville magnetic anomaly located 3 miles south of the Elmwood Mine (see earlier memos for location). Two holes were started on November 6, 1973. It is anticipated that all four holes will be completed by December 15, 1973.

Cornwall, Missouri

The field investigation of the Cornwall, stratabound copper prospect area situated near St. Genevieve, Missouri was completed on October 27, 1973. A final report on this work should be submitted by November 15, 1973. This report will recommend the acquisition of some 10-12,000 acres of land located along and down-dip from a zone of intermittently mineralized outcrops which are found in the Lower Ordovician Powell Formation of this area. Exploration depths range from 0-1500 feet and target grades and thickness are anticipated to be 1-3% Cu over thicknesses in excess of 10 feet. The recent discovery by Getty Oil of a large and apparently virgin lead occurrence in the central part of the mineralized trend enhances the mineral potential of the Cornwall area.

Bamford, Pennsylvania

The Bamford, Pennsylvania zinc (lead-copper) prospect located 10 miles west of Lancaster, Pa. was examined in October, 1973. A report on this examination is in process and should be submitted in November or early December. This report will recommend that no further work be carried out on the Bamford prospect at this time.

Mid-Continent General

Investigations are underway to secure suitable office space in Knoxville, Tennessee for the Mid-Continent program. Recommendations on available space will be made during the week of November 11, 1973.

CVX 00823

Salt Lake City, Utah  
October 2, 1973

MINERS DEPARTMENT	
OCT 4 '73	
<del>R. A. BONE</del>	
G. F. BARNES	
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S. MUESSIG	
D. A. NICHOLS	
F. J. NOWAK	
K. M. REAM	
L. C. ROPE	
D. E. WISEMAN	
FILE	

TO: MR. CECIL H. SMITH  
FROM: R. D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - SEPTEMBER, 1973

URANIUM

PERSONNEL

Mrs. Sherry R. Utley resigned to assume the duties of housewife and mother.

Miss Anita L. Rogers was hired to fill the secretarial vacancy in the District Land Department.

OPERATIONS

NEW MEXICO

El Dado Project, McKinley County

Pioneer Nuclear made a field examination of the El Dado Claim Group. They appear receptive to an offer for them to drill-to-earn up to two-thirds interest in the property.

Ignacio-Chavez Grant, Bernalillo & McKinley Counties

Pioneer Nuclear, Texas Eastern Transmission and Getty Oil Company executed a lease giving each company, respectively, a one-third interest in 47,250 acres of the Ignacio Chavez Grant. A drill program has been outlined and drilling will commence as soon as a rig can be found.

Bureau of Land Management officials will examine drill hole locations and access routes within the next few weeks.

Sanostee Project, San Juan County

The Salt Lake City office was notified on September 5th that Getty Oil was not successful in winning a joint venture agreement with the Navajo Tribe. Rumors are that Exxon Corporation was selected as the operator of the project.

CVX 00824

October 2, 1973

Santa Fe Formation Reconnaissance, Santa Fe County

Two days were spent in the field near Espanola, New Mexico examining uranium mineralization in the outcrops. Due to an unfavorable host bed, no further immediate work is planned for this area.

Outcrops in other areas are being examined for uranium mineralization.

WYOMINGPoison Spider Project, Natrona County

The basic requirements to satisfy leasing obligations for this area were completed during September. One rig will continue drilling in the area to obtain additional subsurface information.

Cleveland-Cliffs/GO-SO JV

No significant mineralization has been reported to the Salt Lake City office since the first week of September. Drilling has been curtailed because of unfavorable weather conditions.

GENERALLa Bonte Area Property Submittal - Converse Co., Wyo.

Field examinations were made concerning this property on Sept. 18. A report has been completed and recommendations submitted to the District Exploration Manager.

Lone Tree Claims - Shirley Basin - Carbon Co., Wyo.

A report concerning these claims has been completed and recommendation submitted to the District Exploration Manager.

Monarch Claim Group - Pend Orielle Co., Washington

A field examination concerning this submittal was made on September 25. Recommendations will follow when all data have been evaluated.

*R.D. Gypson*

RDC,JR:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

APPROVED

*Cecil H. Smith*

CVX 00825



SEPTEMBER, 1973

**CVX 00826**

Salt Lake City, Utah  
September 7, 1973

TO: MR. CECIL H. SMITH  
FROM: ROBERT D. CYPERT, JR.  
SUBJ: MONTHLY PROGRESS REPORT - AUGUST, 1973

MINERALS DEPARTMENT	
SEP 10 1973	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MUESSIG	
D. A. NICHOLS	
F. J. NOWAK	
K. M. REIM	
L. C. ROVE	
B. L. WIGSTAD	
FILE	

#### OPERATIONS

##### ARIZONA (Reported by William M. Pennell) Artillery Peak Project, Mohave County

Sixteen claims (223.1 acres) were leased and 61 claims (1172.8 acres) were located and validated in mineralized Tertiary lake beds. A detailed study of prior drilling on the leased claims has delineated over 400,000 lbs. of .12% U<sub>3</sub>O<sub>8</sub>. Two reports summarizing this study and the geologic potential of the project area were completed.

Five thousand line miles of airborne radiometrics were reduced and plotted and the resulting anomalies visited on the ground. No anomalous areas were found to have as great a potential as the Artillery area and therefore the possibility of extending the claims now held appears limited.

##### WYOMING (Reported by Robert P. Barnes) Poison Spider Area, Natrona County

Drilling commenced on the Poison Spider prospect during the latter part of August. At month's end, five holes totaling 4330 feet had been completed. No significant mineralization has been encountered to date. Drill depths to the base of the Wind River formation have been greater on the east side of the Poison Spider Basin than originally anticipated.

##### Pine Mountain

A program to acquire an area west of Pine Mountain on the northeast side of the Poison Spider Basin was initiated in August. Discovery of anomalous radioactivity in outcrops of arkosic sandstone lead to claim staking of adjacent lands. The contract staker was continuing to locate claims for us in this area at month's end.

CVX 00827

Powder River Basin - North Butte Excluded Area

Drilling commenced on the west flank of North Butte. To date, results have been quite encouraging. These profiles of holes about 1600 feet apart have shown the mineralization to be 100 to 200 feet wide where it was drilled. It is quite possible that several million pounds of  $U_3O_8$  will be added to the reserves at North Butte as a result of this program. The drilling has been concentrated in Section 10 this month. Some 28 holes will be drilled in Section 14 commencing in September.

Thunderbird JV Project

Drilling was suspended during the month to await commencement of a new assessment year. It is expected that drilling will resume early in September. The initial program is a series of profiles on the Q Sand cell edge in the Pine Ridge area.

GENERAL

Reviewing of past uranium exploration projects is in progress. The first phase of this work is primarily a review of the geologic history, electrical surveys, lithologic logs, structural and depositional features of the areas where past work has been completed. Exploration and production economics will be included in the re-evaluation of these projects.

Kerr-McGee's exploration department is re-evaluating and reacquiring properties in the Shirley Basin. Some of these properties (such as the Lone Tree Group of Claims) were previously held by the KGS JV group. They are also acquiring other properties located in areas of common interest to the Getty/Skelly UJV group. Some of these properties have been previously drilled and evaluated by as many as three other companies since uranium exploration was initiated in the Shirley Basin.

*R. D. Gypert*

RDC, JR:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

APPROVED: *Carl H. Smith*

CVX 00828

SALT LAKE CITY OFFICE

URANIUM

AUGUST, 1973

[illegible]

**CVX 00829**

Salt Lake City, Utah  
August 14, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - JUNE & JULY, 1973

GENERALS DEPARTMENT	
AG 1673	
R. P. BLANC	
G. F. DAWSON	
E. I. DEWEY	
T. L. HUGHES	
C. J. KUMERT	
H. LAUSEN	
S. M. SIG	
D. A. NORTON	
F. J. [illegible]	
K. M. [illegible]	
L. C. [illegible]	
B. J. WILLIAMS	
FILE	

### URANIUM

#### PERSONNEL

Messrs. Robert D. Cypert, Jr. and James R. Hawkins were transferred to the Salt Lake office effective June 16, 1973.

Mr. J. T. Williams was transferred to the Los Angeles office effective June 1, 1973.

#### OPERATIONS

##### WYOMING

##### Poison Spider Basin, Natrona County

Field studies combined with airborne and ground radiometric data has outlined two prospect areas in the east arm of the Wind River Basin. Agreement has been reached on the acquisition of one area called the Poison Spider prospect that lies just east of the Clarkson Hill mining area. Staking is currently in progress on the other area. The latter is just west of Pine Mountain and is called Pine Mountain prospect.

##### CCI-GETTY/SKELLY Joint Venture

Agreement was reached with CCI to expand the exploration program at North Butte. We will spend \$100,000 with equal shares from Getty/Skelly and CCI to drill the "B" Sand cell edge from the northwest corner of the property to the ore reserve area two miles to the southeast. This segment of the "B" sand cell edge has not been tested before although at both ends it has been shown to be well mineralized. This drilling program was starting at month's end.

##### THUNDERBIRD Joint Venture

Getty/Skelly's thoughts on the drilling priorities and targets were conveyed to the operator. Also, suggestions were made on possible targets for Pioneer's discretionary Phase III drilling program.

CVX 00830

A study was made of Pioneer Nuclear's lease properties within the Joint Venture. After a careful review of the available data, it was determined that we should not participate in the exploration of these areas.

Muskrat Basin, Fremont County

A submittal of claims on the west end of the Gas Hills is currently being studied. Field and airborne examination of the property disclosed no evidence of previous drilling on the property.

GENERAL

Property acquisition of the Artillery Peak area, Mohave County, Arizona, was completed during the month of July. Validation work on the new claims is near completion.

Property acquisition of the Poison Spider area project is near completion. Leases should be signed by August 15, 1973.

SCOUTING

Possible Land Acquisition  
Grace Properties - New Mexico

Information obtained from a consulting geologist who is familiar with Mr. Grace's form-out proposal strongly indicates that the terms are economically unattractive at present. Therefore, this project has been placed into a holding stage for the time being.

Federal Resources - Wyoming

No additional discussions have been held with the Federal people concerning a joint operation on some of their property. Mr. Robert Schick, who is responsible for their farm-out proposals, has not been available to discuss the terms of the farm-out or joint venture possibility. It was indicated that he would contact the Salt Lake City office by August 10, 1973.

55 Ranch Property - Converse County, Wyoming (Mobil Oil Co.)

July 17th was spent in the Mobil Oil Company office at Denver discussing and examining, with one of their geologists, the drill hole data of the area. Included in these data were electrical surveys, lithologic logs, drilling reports, disequilibrium studies, ore reserve calculations, porosity permeability and density studies.

CVX 00831

On the basis of the above data, an evaluation report with recommendations was submitted to the District Exploration Manager (report dated August 2, 1973).

A handwritten signature in cursive script, appearing to read "Paul H. Smith".

RDC, JR:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

CVX 00832

URANIUM

MONTHLY SUMMARY SHEET  
SALT LAKE CITY OFFICE

JUNE & JULY, 1973

[illegible]

**CVX 00833**



[illegible]

② → D. A. NICHOLS

② → J. I. NOWAK

PERSONNEL

## OPERATIONS

## NEW MEXICO

We have been unable to locate any available drills to complete our planned work in the Church Rock area. We may be forced to delay this drilling until the Fall.

Боевая - 225000

The Letter Agreement between Getty Oil, Sohio, Hydro Nuclear and Antweil Drilling should be signed next month. We will participate in five tests on or near our El Dado claims.

GOC share ~ \$30,000  
(GOC/SEC)

The Navajos have delayed their decision until July 1 regarding negotiating a Joint Venture Agreement.

## UTAH

Surface and subsurface studies are continuing on this project.

**CVX 00834**

June 25, 1973

WYOMING

Beaver Divide Project, Fremont County

Drill bids have been submitted for a 10-hole program on this property. Drill availability is tight in Wyoming and we may not be able to complete this drilling until later in the year.

Pass Creek Project, Carbon County

A joint venture proposal was presented to Gulf during the period. Our proposal requires the drilling of 20 holes through the Eocene sediments to earn a 50 percent interest in Gulf's acreage.

20 holes - 300' avg - = 6000'  
6000' @ 2.00/H = \$12,000.  
Cecil H. Smith

CHS:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

CVX 00835

## URANIUM

MONTHLY SUMMARY SHEET

MAY, 1973

[illegible]

**CVX 00836**

Salt Lake City, Utah  
May 15, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - APRIL, 1973

URANIUM

PERSONNEL

No changes.

OPERATIONS

NEW MEXICO

Canoncito Project, Valencia and Bernalillo Counties

A two-hole drilling program was recommended to evaluate the untested 320-acre tract in the Canoncito area. The 640-acre tract was recommended for relinquishment as past drilling had adequately tested the potential of this area.

Chico Project, Sandoval County

Gamma-electric logs obtained by trades along with oil well cuttings were studied during the period. Several major thick sandstone channels in the Westwater interval were projected in the Chico area. A field program consisting of section measuring, outcrop alteration studies, additional log trades and some drilling was proposed to delineate areas most favorable for uranium ore occurrences.

Church Rock Project, McKinley County

Three drill hole locations were staked on the westernmost tract in the Church Rock area. These holes will test both the drilling trend and sandstone channels which project across this tract.

El Dado Project, McKinley County

A draft Letter Agreement between Getty Oil, Sohio, Hydro Nuclear and Antweil for a joint exploration program was prepared during the period. It is expected this program will begin within the next few months and will result in at least one test on the El Dado claims as well as furnish information from four additional holes in the area.

MINERALS DEPARTMENT	
MAY 17 1973	
R. P. BLANC	178
G. F. DAVIDSON	
E. J. BEISLER	
T. L. HUGHES	
C. J. KIEFER	
H. LABREY	
S. MUSSIG	
D. A. RICHMOND	
F. J. RYAN	
K. M. RYAN	
L. C. RYAN	
B. J. RYAN	6410
FILE	

CVX 00837

Sanostee, San Juan County

The Navajo Tribe informed us that they expected a decision by June 1 regarding negotiating a joint venture agreement.

Scouting

Conoco is drilling with four rigs on their Crown Point properties. Some core is being taken through mineralized Westwater near the town of Crown Point.

Mobil is drilling north of Conoco in the Crown Point area.

United Nuclear is drilling on their Navajo Sale #5 leases along a southwest trend which projects across our eastern Church Rock properties.

Grace is drilling near San Mateo, west of Gulf's Mt. Taylor deposit.

Gulf is drilling with one rig on Mt. Taylor. It is reported they have ordered two 4000+ foot winches and are planning shaft sinking operations in the near future.

Exxon, Kerr-McGee and Sohio continue to drill close-spaced holes on their ore occurrences in the Rio Puerco and L-Bar properties.

UTAH

SE Utah

Literature and drill log compilation on the Salt Wash member of the Morrison Formation and Mossback-Shinarump member of the Chinle Formation continued during the period. A field reconnaissance trip is planned in May to identify areas warranting additional detailed studies for uranium potential.

WYOMING

Beaver Divide Project, Fremont County

This project area consists of approximately 21,400 acres held by unpatented claim locations and discovery monuments. A 20-hole drilling program has been recommended to further evaluate the uranium potential of this area.

McTurk Draw Project, Fremont County

This project area consists of approximately 2,640 acres held by unpatented claim locations. A 4-hole drilling program has been recommended to evaluate the close-spaced drilling trend extending into this project area.

CVX 00838

Pass Creek Basin, Carbon County

Discussions with Gulf Mineral Resources personnel in Riverton, Wyoming, indicate they would consider some type of joint venture arrangement to further explore this area. To date, Gulf has drilled 10 holes on their claims in the area. Results of this drilling were not obtained but they said some additional drilling was warranted.

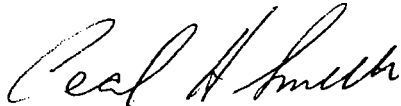
Ryan Hill Prospect, Natrona County, Wyoming

This prospect area located in the east arm of the Wind River Basin has been recommended for acquisition. The target formation is buried Wind River arkosic channel sandstones. The favorable location of this area in respect to the other producing areas in Wyoming along with the known surface and subsurface mineralization in the Ryan Hill area indicates this is a potential uranium area even though the expected ore depths will exceed 1500 feet.

Scouting

Exxon has leased or is leasing 165,000 acres on the Wind River Indian Reservation. They have completed their Phase I drilling program and admit to finding mineralization warranting further drilling.

Union Pacific Mining Company is scouting roads in the Copper Mountain area in preparation to doing further drilling.



CHS:alr  
Attachment

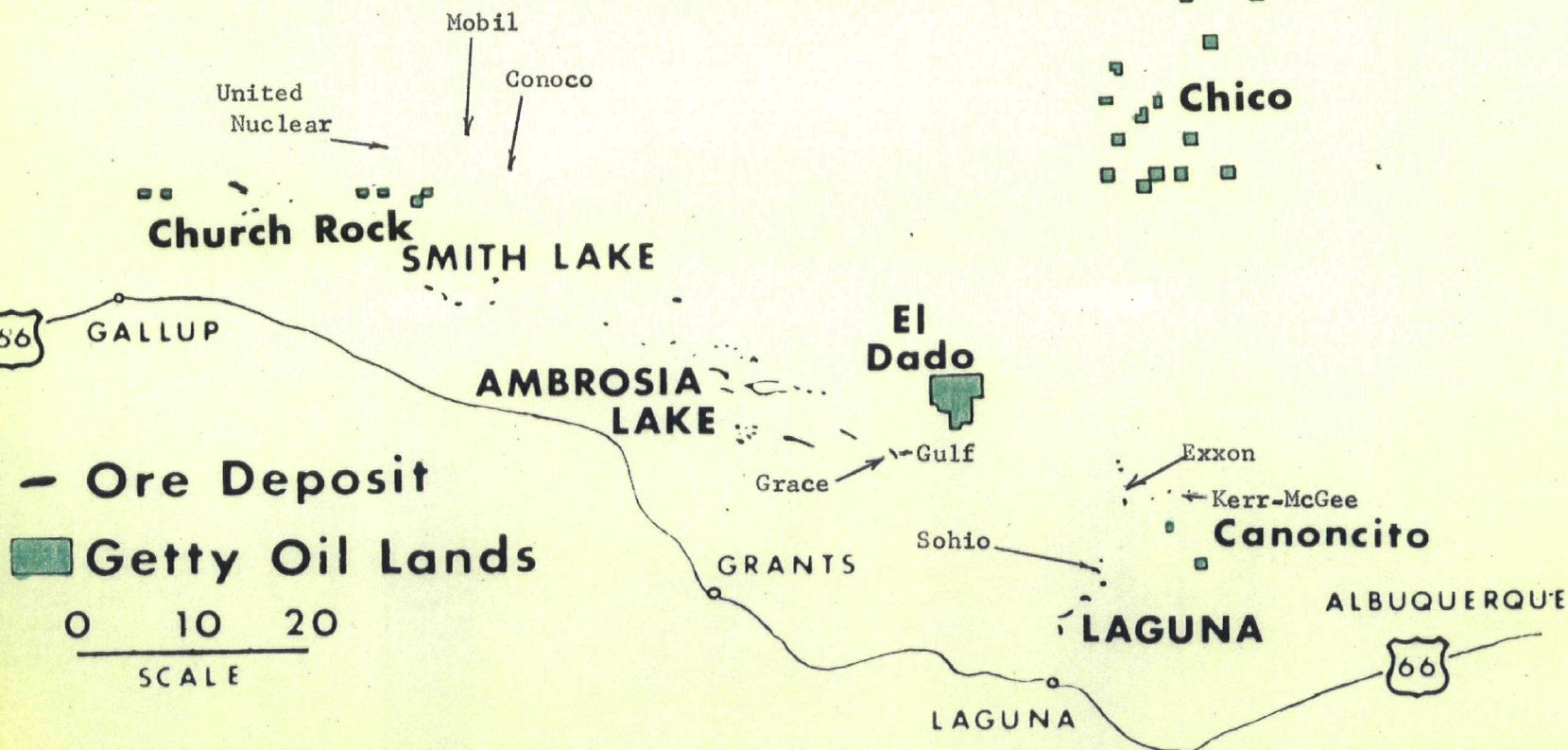
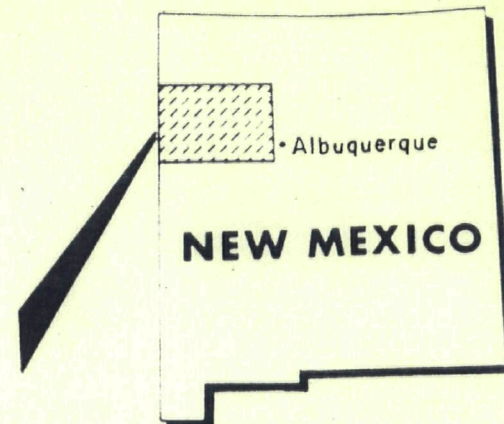
cc: Messrs. Glenn E. McKinley  
William M. Pennell

CVX 00839

ARIZONA

NEW MEXICO

# NEW MEXICO PROJECTS



CVX 00840



URANIUM

MONTHLY SUMMARY SHEET  
SALT LAKE CITY OFFICE

APRIL, 1973

[illegible]

**CVX 00841**



Salt Lake City, Utah  
April 19, 1973

MINERALS DEPARTMENT	
1R 2 173	
R. P. BLANC	
G. F. CARSON	
E. J. DEMETER	
T. L. HUSSEY	
C. J. KUMMER	
H. LARSEN	
S. MUESSIG	
D. A. RICHMOND	
F. J. ROWE	
K. M. REED	
L. C. ROYE	
B. L. WATSON	
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH

SUBJ: MONTHLY PROGRESS - MARCH, 1973

#### PERSONNEL

During the month, the following personnel change was made:

Mr. Robert A. Mason, Field Exploration Foreman, resigned effective March 13, 1973.

#### OPERATIONS

##### ARIZONA

###### Cameron Area, Coconino County

Additional mapping of other investigators data has outlined three main areas to be looked at in detail in the field: one is northwest of Page; another, at Cameron; the third, southeast of Monument Valley. These areas are typified by thick sections of Shinarump in northwest and northeast trending channels. All areas have had some uranium production.

###### Artillery Area, Mohave County

A field reconnaissance was made and courthouse records searched of lands underlain by Tertiary, uranium-bearing sediments. Additional studies will be initiated to evaluate the potential of extending the ore drilled by Hecla in 1970.

##### NEW MEXICO

###### Chico Project, Sandoval County

Log trade data, measured sections, oil well tests and our drilling, is providing the basis for re-evaluation of the Chico area. Construction of new correlation cross-sections and fence diagrams were initiated.

CVX 00842

The most prospective, shallow acreage appears to be held by the Jemez Tribe. Negotiations were held with the Tribal Chairman and the Bureau of Indian Affairs' personnel for the attainment of a prospecting permit. It is hoped that these negotiations will pave the way for a mineral lease if warranted by the prospecting and subsurface studies.

El Dado Project, McKinley County

Meetings were held with the representative of the holder of the oil and gas leases in the El Dado area and with the mineral holders. Terms of an agreement were outlined establishing Antweil, the oil operator, as the operator of the joint drilling program. This agreement was in the process of being written in Los Angeles at month's end.

Although many of the environmental requirements will be avoided by drilling some holes on surface owned in fee by Sohio, not the Forest Service, the necessary governmental paper work and rig unavailability will delay spudding the first of the five holes into June or July. This late start-up may result in the drilling on the El Dado claim group to be delayed until after September 1, 1973, thus making our contributions of about \$40,000.00 applicable to our 1974 assessment obligations.

Parador Submittal, McKinley County

Los Angeles notified Parador's agent that Getty Oil was not interested in acquiring the reserves on their Section 26, T14N., R9W. This decision was based on United Nuclear's impressions of the minerability of the ore they encountered when contracted to mine the westernmost portion of the ore body.

Scouting

Grace's drilling of a small parcel of land immediately west of Gulf's Mt. Taylor deposit has, reportedly, encountered thick ore grade uranium mineralization. Only three tests have been made, yet rumor places indicated ore in the 10 million pound range.

United Nuclear is drilling with one rig on their Sale #5 acreage north of our easternmost Church Rock acreage.

Conoco is setting up four rigs to drill their Crown Point properties.

Phillips recently acquired an interest in Everest Exploration's Sale #6 acreage on which Everest had one mineralized hole out of four drilled on one and one-half sections. This land is located immediately east of Conoco's Crown Point acreage.

Gulf is drilling with two rigs on Mt. Taylor in spite of the snow. Gulf will drill Sale #5 Navajo Lease Blocks in 1973.

Sohio is doing some development drilling on their L-Bar ore body.

Kerr-McGee continues to drill their Rio Puerco properties with one rig.

CVX 00843

UTAHKaiparowits Plateau

Work continued on the study of the Salt Wash Member of the Morrison. Several days were spent in the field examining uranium occurrences in the Salt Wash Member of the Morrison around the perimeter of the Henry Mountain Basin. Subsurface maps of the Morrison are in progress.

San Rafael Desert

A subsurface study of the basal sandstones of the Chinle has been commenced in the area between the San Rafael Swell and the Monument Uplift. Over much of this area drilling depths are shallow. We have obtained a number of oil well logs that should provide stratigraphic and structural control. Uranium has been mined from the basal Chinle sandstones where they are exposed along the east side of the San Rafael Swell and the northwest side of the Monument Uplift.

WYOMINGPowder River Basin

American Nuclear has acquired a 37½% interest in the Christensen Ranch property formerly held by Sohio. They obtained this interest by purchasing 12½% interest from Jenkins and a half of Sohio's interest. Wold has increased their interest from 12½% to 37½% by acquiring the other half of Sohio's interest. Western Nuclear retains a 25% interest. Reportedly there is 1,000,000 lbs. firm on the property with good potential for other deposits.



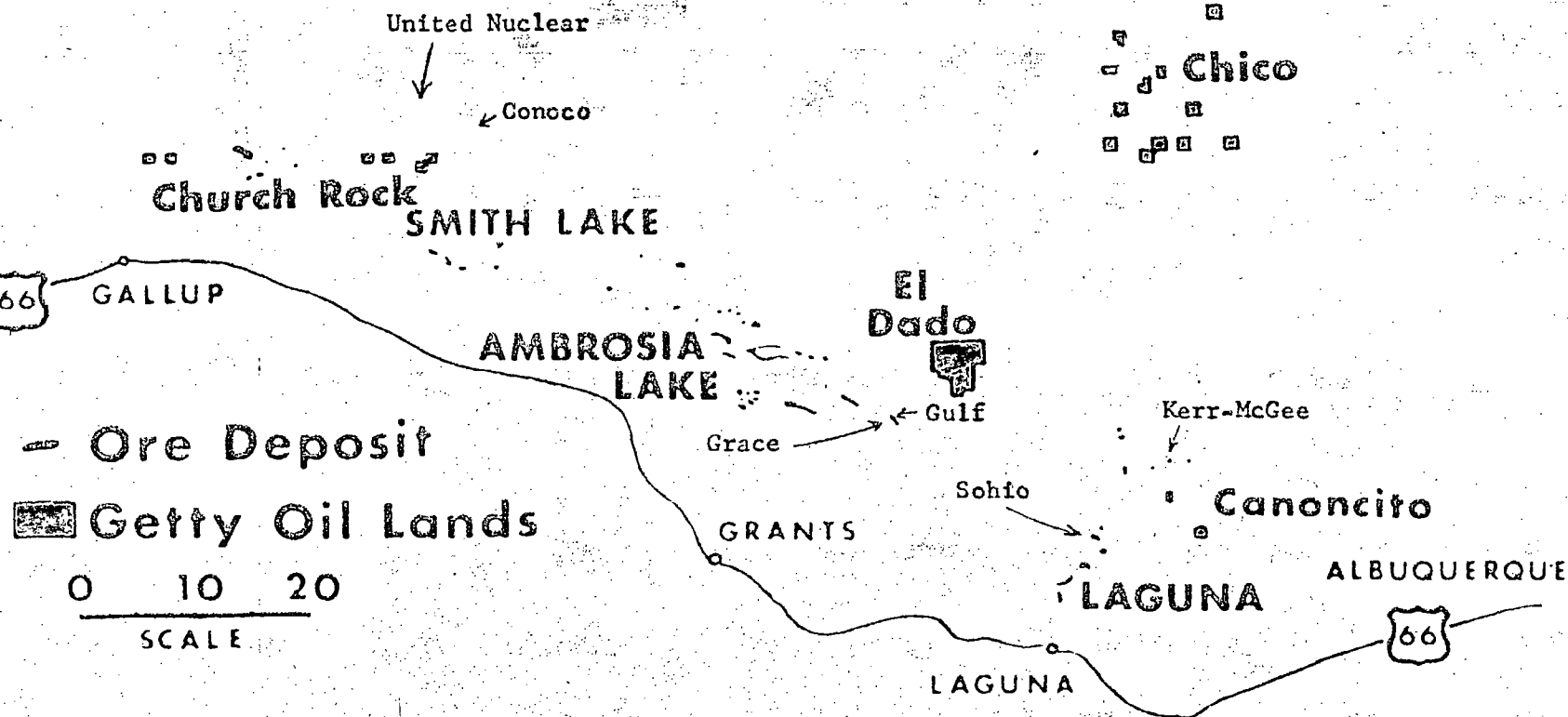
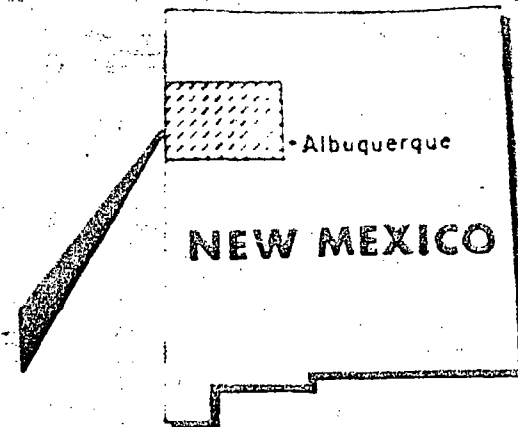
CHS:alr  
Attachment

cc: Messrs. Glenn E. McKinley w/attach.  
William M. Pennell w/attach.

CVX 00844

ARIZONA  
NEW MEXICO

# NEW MEXICO PROJECTS



CVX 00845

URANIUM

MONTHLY SUMMARY SHEET

MARCH, 1973

[illegible]

**CVX 00846**

Salt Lake City, Utah  
March 8, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - FEBRUARY, 1973

MINERALS DEPARTMENT	
MAR 12 '73	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MURPHY	
D. A. MURPHY	
F. J. NIXON	
K. R. SMITH	
L. E. SMITH	
P. T. SMITH	
FILE	

PERSONNEL

No changes.

OPERATIONS

ARIZONA

Cameron Area - GOC - 100%

We completed our literature compilation and studies of subsurface data for this area. Field work is now in the planning stage and will commence when muddy roads become passable.

Other companies with active Triassic uranium programs include: Anaconda, Conoco and Ranchers.

NEW MEXICO

Chico and Canoncito Projects - GOC - 100%

Log trades were completed with Anaconda, Grace and Ranchers. Oil well samples were logged. This additional data will be incorporated in our evaluation and recommendations for these areas.

Church Rock Project - GOC - 100%

Correlation cross sections were completed from Ambrosia Lake to the Gallup Sag area. The relationship of the Church Rock project to the major uranium districts with respect to Westwater and Brushy Basin thickening, interfingering and pinchouts is being evaluated.

El Dado Project - GOC - 100%

A proposal was received from the holder of the oil and gas leases near and under Getty Oil's uranium claims. We have been requested to supply \$40,000 in bottom-hole contribution to complete five holes through the Westwater Formation.

CVX 00847

Hydronuclear has been requested to supply a like amount and Sohio twice this figure. The program would provide two tests on our El Dado claims and data on three holes in the vicinity of our claims. A meeting is scheduled in March with the participants to discuss details of this proposal.

#### Scouting

South of the Church Rock area, Anaconda is testing for uranium in the Triassic Chinle formation on approximately 20,000 acres acquired from New Mexico and Arizona Land Company.

In the Rio Puerco area, Kerr-McGee, Exxon and Sohio have active drill programs.

In the Crown Point area United Nuclear and Kerr-McGee have active drill programs.

On Mount Taylor, Gulf has two drill rigs operating; Pioneer Nuclear has a joint venture with Petro-Dynamics west of Ambrosia Lake.

#### UTAH

##### General

Literature research has continued during the month to develop areas of interest in southeastern Utah. The uranium potential is being investigated for both the Jurassic Morrison formation and Triassic Chinle formation. Field investigation will be started in March.

#### WYOMING

##### Ryan Hill area

Additional drill logs were examined during the month. Most of the past uranium effort in the area failed to test the Lower Wind River and Upper Fort Union arkosic sandstones. Testing the potential of this area will require drilling to depths of 2000 feet. Evaluation of all available data and field examination is planned.

##### Scouting

Exxon is reported to have acquired approximately 75,000 acres in the Crowheart Butte area, Wind River Indian Reservation. They have four drills operating in the area. Hole spacing is on 100 to 200-foot centers.

During January, 1973, 382,000 feet of exploratory uranium drilling was completed in Wyoming compared to 153,000 feet in January, 1972. Approximately 80 percent of this drilling is in the Powder River Basin district.

It is also reported that Exxon has recently purchased 40 hand carried scintillometers from Mt. Sopris. If true, it can be assumed they are planning a saturation prospecting program this summer.


CVX 00848

Mr. Robert P. Blanc

-3-

March 8, 1973

It has been learned that AMAX has made an offer to purchase, for \$1.6 million, the 50 percent interest owned by Sohio in 29,000 acres of uranium property adjacent to the CCI-Getty/Skelly North Butte property.



CHS:alr  
Attachment

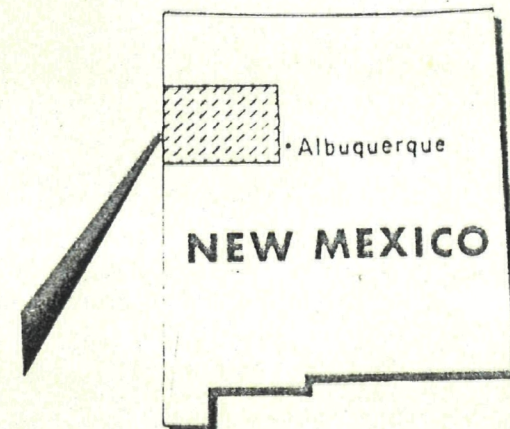
cc: Messrs. Glenn E. McKinley  
William M. Pennell  
Harold L. Reade, Jr.

CVX 00849



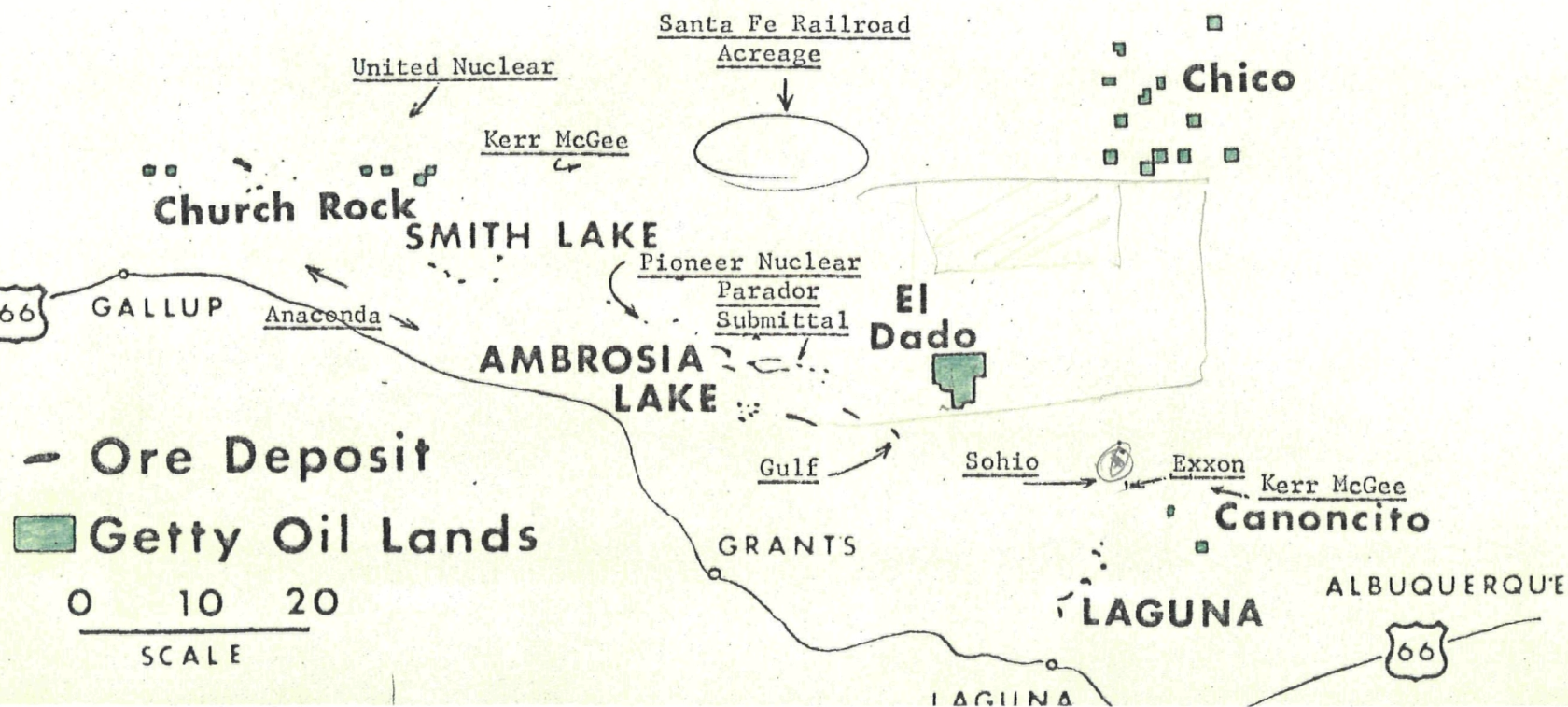
March 5, 1973

MONTHLY PROGRESS REPORT  
February, 1973



# NEW MEXICO PROJECTS

ARIZON  
NEW MEXICO



CVX 00850

URANIUM

MONTHLY SUMMARY SHEET

FEBRUARY, 1973

[illegible]

**CVX 00851**

Salt Lake City, Utah  
February 28, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJECT: MONTHLY METALS REPORT FOR JANUARY  
INCLUDING REVIEW OF 1972 ACTIVITIES

MINERALS DEPARTMENT	
MAR 1 '73	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEWEY	
T. L. HUGHES	
C. J. KUBERT	
H. LAURSEN	
S. MUESSIG	
D. A. NICHOLS	
F. J. NORWAX	
K. M. REIN	
L. C. ROY	
B. L. WIREMAN	
FILE	

GENERAL

Presentation of the final "Metals" report was made in Los Angeles this month. The recommendations which accompanied this report regarding a 1973-75 exploration program for U. S. Midcontinent stratabound zinc deposits was accepted as presented. No action was taken however on the Salt Lake City recommendations for specific copper and precious metal exploration programs--outside of the scope of the existing joint venture programs and Getty Oil Company projects.

SUBMITTALS

No submittals of particular merit were received during January.

JOINT VENTURE PROGRAMS

Papago Project (Getty Oil, Amex, Rainbow-Scurry)

No report was received this month on the reconnaissance program currently being carried out.

Wisc./Mich. Project (IMC-Getty Oil)

Upson Area: During the month of January two drill holes, UP-21 and UP-22 were completed and UP-14 was started on one of the last two remaining untested geophysical anomalies at the Upson prospect area.

CVX 00852

Monthly Metals Report for January  
Including Review of 1972 Activities  
Page -2-

Restricted zones of pyrite and pyrrhotite were encountered in UP-21 and UP-22; this mineralization is considered to have been the source of the EM anomalies tested. Two additional drill holes, UP-16 and UP-25 were also completed and another, UP-17 was started on the other remaining Upson geophysical anomaly during the month of January. Very weak sulfide mineralization was encountered in UP-16 and UP-25; in addition, some 100' of rhyolite carrying disseminated pyrite and pyrrhotite without visible copper or zinc sulfides was found in UP-17.

Round Lake: Drill hole RL-4 was completed to a total depth of 1,405 feet this month. A complete set of assays are not yet available for this hole but it is reported to contain several zones totaling 756' in length which contain .60-.80%  $V_2O_5$ . Drill hole RL-2 was started this month; at month's end its total depth was 750 feet. A large proportion of this hole to date is reported to be in the vanadiferous magnetite-ilmenite mineralization.

Boss-Bixby (Getty Oil, Azcon, Granite City)

Three drill holes were completed this month. One of these holes, J-30, whose objective was to test the major magnetic anomaly north of the known copper deposit (i.e. "epicenter"), was bottomed at 3,000 feet without encountering any mineralization or intrusive bodies of interest. Another hole FED-1, whose objective was to test the major magnetic anomaly to the east of the known copper mineralization (i.e. "East Dome"), was bottomed at 1,338' after testing some 431 feet of Precambrian rock with negative results. The third hole USA-71, which was deepened to 3,918 feet to test for mineralization at depth, did not intersect any significant zones of copper mineralization.

Two additional holes, USA-84 and FED-2, were started or continued to be drilled this month. The objective of USA-84 (1,562' as of 1/31/73) is to test the eastward extension of the known Boss-Bixby mineralization. The objective of FED-2 (150' as of 1/31/73) is to test the southern part of the "East Dome" anomaly.

SALT LAKE CITY GROUP INVESTIGATIONS

The major effort of the Salt Lake City staff this month was directing towards the following: 1) an in-depth study of the current joint venture programs, particularly the Wisc./Mich. and Papago projects; 2) a summary report on the 1972 activities at the Hideaway Project, 3) start up of field investigations in the California Mother Lode Gold Belt, 4) initiation of the Brimstone Joint Venture Project for zinc in Central Tennessee with The New Jersey Zinc Co., 5) formal initiation of the Getty Oil Co. strata-bound zinc program in the U. S. Midcontinent.

CVX 00853

Monthly Metals Report for January  
Including Review of 1972 Activities  
Page -3-

1. Arrangements were made late this month for one geologist to spend two-three weeks in February at IMC's Libertyville, Illinois, laboratories and Wisconsin field office in order to study firsthand, the work done and data obtained to date on the massive sulfide and vanadiferous magnetite projects. The object of this work is to be able to present a comprehensive Getty Oil Company recommendation on both of these projects concurrent with the first quarter reports on the Wisc./Mich. project to be prepared in March or April by IMC.

2. The field mapping and drill hole results of the 1972 Hideaway project are currently being compiled and interpreted. The objective of this work is to document the 1972 work and to determine what recommendations if any will be made for further work at this locality.

3. Field work was started this month by one of the two geologists who will be working on the Getty Oil Co. Mother Lode gold program (i.e. Mariposa, Tuolumne, Calaveras, Amador, El Dorado Counties, Calif.). The second member of this group will start work in early February.

4. Dialogue was initiated, basic terms were agreed upon, and a letter of intent was prepared and submitted to New Jersey Zinc this month concerning the Brimstone Joint Venture area. The agreement covers an exploration program for stratabound zinc on a 18,000 <sup>+</sup> acre tract of ground located some 25 miles northeast of the Elmwood Zinc mine at Carthage, Tennessee. The agreement calls for a firm commitment of \$125,000 for land acquisition, property rentals and diamond drilling in 1973 and a total expenditure over the next three years of \$525,000 to earn a 50% joint interest with New Jersey Zinc in the property. It is anticipated that drilling will begin in February.

5. During the months of December 1972 and January 1973, the Salt Lake City office contracted for the services of Mr. James W. Odell, a specialist in Midcontinent stratabound zinc and lead exploration. Mr. Odell's work consisted principally of developing ground magnetic anomalies in regions of favorable geology already known to him. His work during the past two months has resulted in the discovery of three principal target areas: 1) Brimstone-Cumberland area, Central Tennessee, 2) McMinnville area, Central Tennessee and 3) the Pierce City area, Southwestern Missouri area. The Brimstone and McMinnville magnetic anomalies have been recommended for acquisition pending the completion of a small amount of additional field and core library research. A recommendation for the permanent employment of Mr. Odell is pending.

CVX 00854

### 1972 REVIEW

The single most significant accomplishment of the Salt Lake City Metals Group, which was established in 1972, was the preparation of the "U. S. Metals Opportunities" report. The principal objective of this study was to define for the four commodities--copper, zinc, gold and silver--where and in what specific kinds of geologic environments Getty Oil Company should direct its U. S. exploration efforts in order to find, in as short a time as possible, a viable metal deposit. This study occupied a major amount of the department's available manpower during the latter half of 1972. The object of this study was achieved and specific 1973-75 exploration proposals outside of the existing joint venture programs were presented to management in January 1973. These recommendations included establishing: 1) general Midcontinent stratabound zinc exploration program as well as participating in selected joint ventures on specific target areas; 2) a general reconnaissance program in the western U. S. for gold-silver deposits in near surface and/or large tonnage potential environments, and 3) a reconnaissance program to investigate both porphyry and stratabound near-surface leachable copper deposits in the central and western U. S.

Numerous property submittals were received during 1972; these totaled 112 from 18 states; commodities of interest included base and precious metals as well as other commodities such as fluorspar. Of the 112 submittals received 87 were rejected without field examination and 20 were rejected following field examination. The five remaining properties of interest were recommended to Los Angeles as worthy of additional work by Getty Oil Company. From these five submittals, two, the Wassuk (Hideaway) Joint Venture and the Brimstone Joint Venture were approved by Los Angeles. The specific target of the Hideaway Project, located 14 miles east of Anaconda's Yerrington, Nevada copper deposit, is the discovery of a buried porphyry copper deposit. The specific target of the Brimstone Joint Venture located 30 miles northeast of New Jersey Zinc's Elmwood, Tennessee zinc deposit, is a buried stratabound zinc deposit.

Three existing joint ventures were monitored and/or managed by the Salt Lake City Metals group during 1972. These were the Papago Project operated by Amex, the Boss-Bixby Project operated by Azcon and the Wisconsin-Michigan Project operated by International Minerals and Chemicals.

#### Papago Project

The most significant achievement of the 1972 Papago program was the testing, by drilling, of several airborne and ground geophysical anomalies in the Comobabi Hills area located 30 miles southwest of ASARCO's Silver Bell porphyry copper deposits. The results of this drilling were negative.



Monthly Metals Report for January  
Including Review of 1972 Activities  
Page -5-

1972 REVIEW, CONT.

Boss-Bixby Project

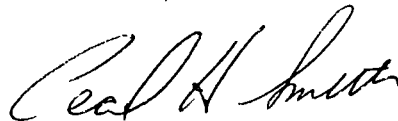
The most significant achievements of the Boss-Bixby Project during 1972 were: 1) the addition through diamond drilling of higher grade reserves to the known deposits and 2) the attainment of a 51% equity position by Getty Oil Company in the Boss-Bixby deposit sometime during December 1972.

On the basis of 36,441' of drilling carried out during 1972 unofficial estimates by Azcon place the current indicated and geologic reserves at  $43 \times 10^6$  tons at .87% Cu and 19.70% Fe on the basis of a Cu Cut-off. This figure represents an increase of some  $11 \times 10^6$  tons over those tonnage figures reported in 1971. Current, Getty Oil Company expenditures on the Boss-Bixby deposit through January 31, 1973, are \$1,534,311.12 or some \$34,000.00 over the amount necessary for Getty Oil Company to earn a 51% equity position in the Boss-Bixby property.

Wisconsin-Michigan Project

The most significant activity of the Wisconsin-Michigan joint venture during 1972 was the testing of the airborne and ground follow-up E.M. anomalies at the Upson and Wakefield, Wisconsin areas and the re-discovery and subsequent testing of the Round Lake vanadiferous, titaniferous-magnetite deposit.

The group of airborne and ground anomalies found during 1972 by the joint venture in the Upson and Wakefield areas, located respectively some 80 and 100 miles northeast of Kennecott's massive sulfide ore body at Ladysmith, Wisconsin, were tested by some 9,210 feet of diamond drilling. At Upson no significant intersections of copper or zinc mineralization were found despite the presence of some substantial zones of .5 - 2.0 or 3.0% disseminated to massive pyrite-pyrrhotite mineralization in intermediate to acidic volcanic rocks. At the Wakefield prospect all holes drilled encountered a strong, graphitic horizon carrying little or no associated sulfide mineralization. This horizon is considered to be the source of the airborne and ground E. M. target anomalies tested.



RGB:su

cc: Messrs.: William M. Pennell  
H. L. Reade, Jr.

CVX 00856

Salt Lake City, Utah  
February 26, 1973

MINERALS DEPARTMENT	
R. P. BLANC	1882
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MUESSIG	
D. A. NICHOLS	
F. J. NICHOLS	
K. M. REIM	
L. C. ROVE	
B. S. WISCHMAN	100
FILE	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH

SUBJECT: MONTHLY METALS REPORT FOR DECEMBER 1972

#### GENERAL

The most important accomplishment of the Metals Group this month was the completion of the final rough draft of the "Metals" report. This report, including accompanying 35 MM slides, was previewed in Los Angeles during the latter part of the month. The final report as well as specific exploration proposals for copper, zinc and gold and silver will be formally presented during January 1973.

#### SUBMITTALS

Several submittals were received during December. Of these, one, a Nevada silver property (Siegel mine) seems worthy of investigation when weather permits.

#### JOINT VENTURE PROGRAMS

##### Papago Project (Amex-Getty Oil, Scurry-Rainbow)

A one-three month reconnaissance program in the northeastern Papago Reservation for the period December 1972 - February 1973 was approved by all partners this month. The specific areas to be investigated include the Greenback area, the northern Santa Rosa Mts., the Silver Bell West area and the northern Brownell Mts. The examination of these four areas is scheduled to be completed by February 28, 1973. At month end the investigation of the Greenback area had been essentially completed; no targets worthy of further interest were generated in this area.

##### Wisc./Mich. Project (IMC-Getty Oil)

Round Lake: By the end of the month the second hole RL-4 was at a depth of 777 feet. No analyses are available but the hole is reported to contain substantial intersections of vanadiferous magnetite.

CVX 00857



Wisc./Mich. Project (IMC-Getty Oil - Cont.)

Upson: No drilling was carried out on this property during December. A ground geophysical survey carried out during mid-month substantiated two out of the four known airborne E. M. anomalies not yet drilled. As a result of this work 10 additional diamond drill holes on those two anomalies were recommended and approved by IMC for early 1973.

Wakefield: Four of the proposed five drill holes approved for this property have been completed. To date substantial intersections of graphite in each of these four holes is believed to be the source of the E. M. target anomalies tested. The last hole is scheduled for completion in 1973.

Wausau: No activity at this property during the month of December.

Boss-Bixby (Getty Oil, Azcon, Granite City)

During the month of December one sleeve hole FED-1 and two diamond drill holes, J-30 and USA-71 were active. The objective of J-30 is to test the cause of the major magnetic "high" lying to the north of the known Boss-Bixby copper mineralization. This hole had reached a depth of 2,878' by month's end (PC contact at 1,436'); no significant mineralization or major intrusive masses (i.e. syenite) have been yet encountered. Diamond drill hole USA-71 was originally bottomed at a depth of 2,430 feet in 1971. The hole is now being deepened in order to test a postulated deeper zone of mineralization; to date this hole has not encountered any additional significant mineralization (TD=3,718'). The objective of FED-1 is to test the "East Dome" magnetic anomaly lying to the east of the known copper mineralization.

Sampling of drill core from the main Boss-Bixby deposit for metallurgical purposes as well as an update of the 1/6/72 ore reserves was started this month. It is anticipated that a final tabulation of Getty Oil Co. expenditures for the year 1972 will show that Getty Oil Co. has reached the  $\$1.5 \times 10^6$  expenditure figure that is required in order for Getty Oil to earn a 51% equity interest in the Boss-Bixby project.

Wassuk Range - Hideaway Project (Getty Oil-U.V. Industries)

No activity was carried out on this project during December.

SALT LAKE CITY GROUP INVESTIGATIONS

The rough draft on the "Metals" report was completed and a preliminary review of the material was given. Development of major objectives for the Salt Lake City group for the period 1973-75 were finalized for presentation in January 1973.

RGB:su

cc: Mr. William M. Pennell  
Mr. H. L. Reade, Jr.



CVX 00858

Salt Lake City, Utah  
February 14, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - JANUARY, 1973

INTERNAL SECURITY	
FEB 1 1973	
R. P. BLANC	
G. F. DANDON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSON	
S. MOORE	
D. A. MURPHY	
E. J. ROY	
K. M. STAN	
L. C. BOW	
B. L. BOW	
W. L. BOW	

PERSONNEL

No changes.

OPERATIONS

NEW MEXICO

El Dado Area, McKinley County

Continued interest was shown by Sohio and Hydro Nuclear in contributing toward a joint exploration project on the north flank of Mt. Taylor. Mr. Jim Sharp, agent for the owners of the oil and gas leases underlying our El Dado block, has approached the various companies with a proposal whereby he would drill a Dakota test with support money from the uranium operators and then deepen the hole for a Westwater test at the uranium operators sole expense. This method of gaining data at a small cost appears to have merit and is under-going study.

Sanostee Area, San Juan County

On January 31, a meeting was held with the Navajo Tribal Office of Mineral Development, and a formal presentation of a joint venture proposal was made. About one dozen other companies are presenting proposals and the Tribal mineral people will process these proposals by judging the various companies' exploration plans, "track record," business deals, and the possible financial benefits to the Tribe if the proposed ventures are successful. This evaluation will be completed by the end of March.

General

Log trades were completed with Anaconda and are in progress with Grace and Ranchers. Regional correlation sections are being assembled.

CVX 00859

Scouting

Gulf is still drilling on Mt. Taylor with one rig. Grace is drilling with three rigs on properties south of our Church Rock block. Humble and Kerr-McGee are drilling close-spaced holes in the Canoncito area. Sohio drilled a few holes on the eastern portion of their ranch during the month (see attached map).

UTAH

Continued study of the stratigraphy of the Morrison Formation has defined two areas that appear to have a potential for the discovery of uranium ore deposits in the Salt Wash Member of the Morrison. The Capitol Reef area has the potential for the discovery of channel type ore deposits at shallow depths. The Kaiparowits Plateau area could yield major sized stratiform ore deposits in the coarse facies of the Salt Wash.

This month, geologic maps and well logs were acquired for these two areas. A visit was made to an ore deposit at the south end of the Capitol Reef area to study the nature of the uranium mineralization.

WYOMINGBeaver Divide, Fremont County

An interim report was completed evaluating data from 1972 drilling. Based on mineral shows in the Eocene Wagon Bed Formation and on the presence of an untested Eocene Wind River Formation play, a 20-hole (25,000 feet) drilling program was recommended for 1973. Also, approximately 1520 acres of land were recommended for acquisition to fill in the land block near the Wagon Bed anomalies.

Pass Creek Basin, Carbon County

Evaluation of airborne radiometric survey data was completed with very encouraging results. Low and high radiation trends fit the surface geology well. Anomalously high areas correlate with hydrogeochemical uranium anomalies, and with the interpreted subsurface model.

Ryan Hill, Natrona County

A report on the uranium potential of the Ryan Hill area has been completed and submitted for review and comment. The potential host sands of the Wind River Formation are found to contain uranium via oil well logs. Although competitor companies have drilled in the area, this deeper sand may not have been tested. Recommendations are lacking and await further investigation and information.

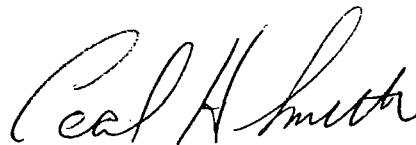
CVX 00860

General

Log trades were negotiated with Pioneer Nuclear and Homestake-Wyoming Partners. We acquired a number of logs from central Wyoming that will aid in evaluation of properties in this area.

BRITISH COLUMBIA

The plates and figures were completed for the report on the uranium exploration program in British Columbia. Recommendations include field mapping, sampling and airborne radiometric surveys. The report with illustrations is currently being reviewed in the Salt Lake City office. Finished copies will be sent to Vancouver, Toronto and Los Angeles offices next month.



CHS:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell  
Harold L. Reade, Jr.

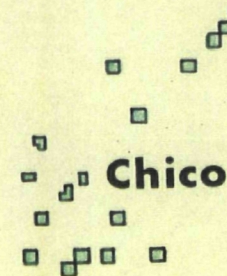
CVX 00861



ARIZONA

NEW MEXICO

# NEW MEXICO PROJECTS



Chico

Grace  
Church Rock  
SMITH LAKE

66 GALLUP

AMBROSIA  
LAKE

El  
Dado

Gulf

Sohio  
Humble  
Kerr McGee

Canoncito

GRANTS

ALBUQUERQUE

LAGUNA

LAGUNA

— Ore Deposit  
■ Getty Oil Lands

0 10 20  
SCALE

CVX 00862

URANIUM

MONTHLY SUMMARY SHEET

JANUARY, 1973

[illegible]

**CVX 00863**



## MINERALS DEPARTMENT

FEB 16 '73

R. P. BLANC	✓
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUHDE	
H. LAURSEN	
S. MUESSIG	✓
D. A. NICHOLS	
F. J. NOWAK	
K. M. REIM	
L. C. ROVE	
D. L. WISEMAN	✓
FILE	

Salt Lake City, Utah  
February 14, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - JANUARY, 1973

PERSONNEL

No changes.

OPERATIONSNEW MEXICOEl Dado Area, McKinley County

Continued interest was shown by Sohio and Hydro Nuclear in contributing toward a joint exploration project on the north flank of Mt. Taylor. Mr. Jim Sharp, agent for the owners of the oil and gas leases underlying our El Dado block, has approached the various companies with a proposal whereby he would drill a Dakota test with support money from the uranium operators and then deepen the hole for a Westwater test at the uranium operators sole expense. This method of gaining data at a small cost appears to have merit and is under-going study.

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General

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CVX 00864

Scouting

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WYOMINGBeaver Divide, Fremont County

An interim report was completed evaluating data from 1972 drilling. Based on mineral shows in the Eocene Wagon Bed Formation and on the presence of an untested Eocene Wind River Formation play, a 20-hole (25,000 feet) drilling program was recommended for 1973. Also, approximately 1520 acres of land were recommended for acquisition to fill in the land block near the Wagon Bed anomalies.

Pass Creek Basin, Carbon County

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Ryan Hill, Natrona County

A report on the uranium potential of the Ryan Hill area has been completed and submitted for review and comment. The potential host sands of the Wind River Formation are found to contain uranium via oil well logs. Although competitor companies have drilled in the area, this deeper sand may not have been tested. Recommendations are lacking and await further investigation and information.

CVX 00865



February 14, 1973

General

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BRITISH COLUMBIA

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*Paul H. Smith*

CHS:alr

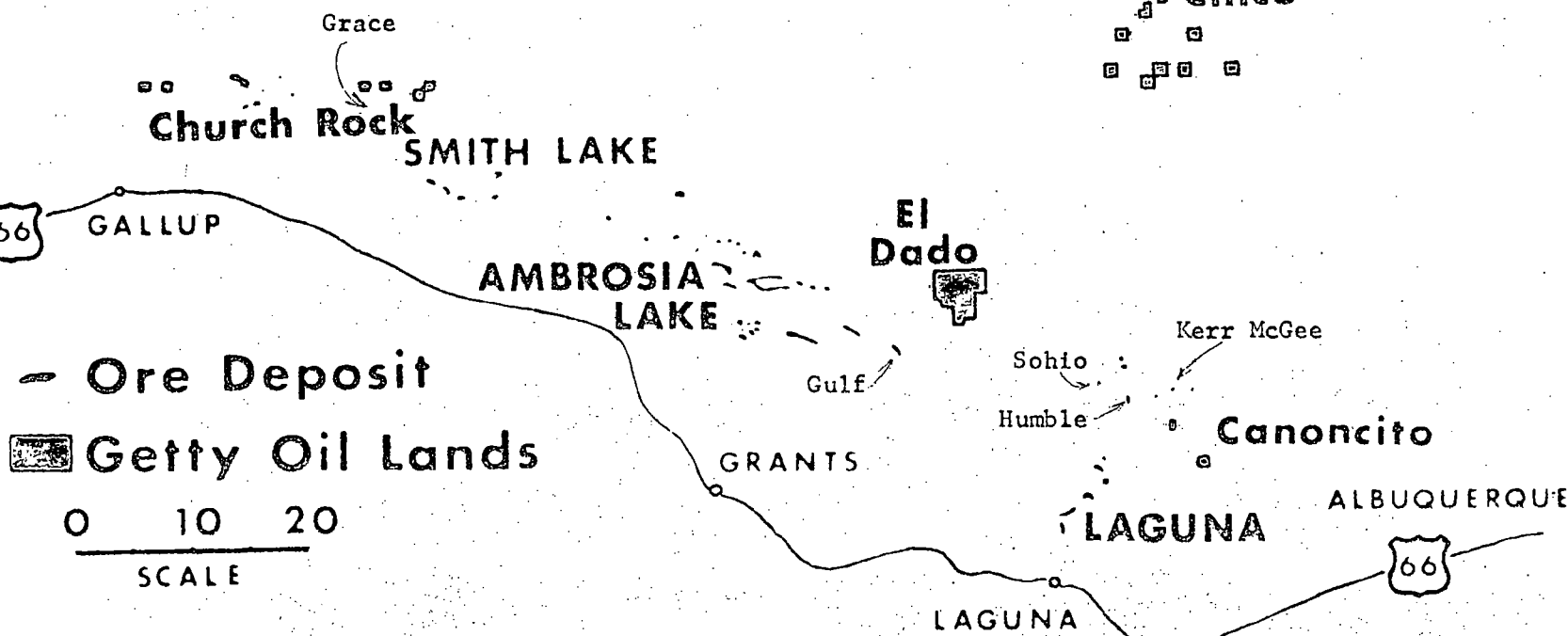
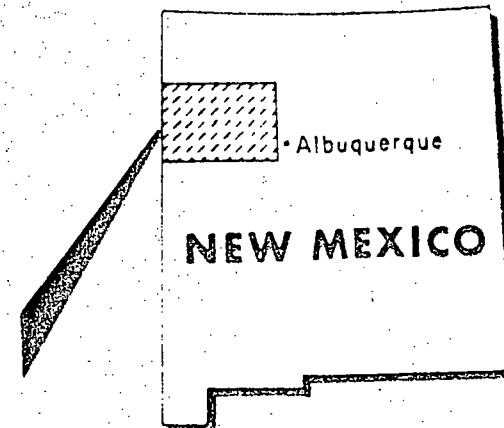
cc: Messrs. Glenn E. McKinley  
William M. Pennell  
Harold L. Reade, Jr.

CVX 00866

ARIZONA

NEW MEXICO

# NEW MEXICO PROJECTS



CVX 00867

URANIUM

MONTHLY SUMMARY SHEET

JANUARY, 1973

[illegible]

**CVX 00868**

WYOMING

URANIUM

Date Received: Nov., 1972  
Submittor: W. J. Murphy, Silver Tip Expl. Co., 5657 Canyon  
Trail, Littleton, Colo. 80123  
Prop. Nme: Silver Tip  
Location: Northwestern Red Desert - Sweetwater County  
Commodity: Uranium  
Disposition: CHS given to JZ 12/6/72 for property evaluation.  
Remarks: Recommended for rejection - JZ 1/23/73

Reports returned 2/12/73 - Rejected. CHS

HAS LA EVER RECEIVED SUBMITTAL? YES

NO

CVX 00869

Salt Lake City, Utah  
January 9, 1973

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJ: MONTHLY PROGRESS REPORT - DECEMBER, 1972

PERSONNEL

No changes.

OPERATIONS

NEW MEXICO

Chico Area, Sandoval County

*Handwritten: Chico Area, Sandoval County, 1/10/73, C.H.S.*  
Using our recent Chico drill data and a re-evaluation of oil well log data, Westwater sandstone isopachs were charted which mapped out a thick, paleo-sandstone channel oriented north and northeast. This reduces the prime area of interest to the extent of this channel within 3500-foot drilling depths.

In order to pin down the position of the sands, negotiations with Ranchers Exploration and with Anaconda for log trades in the area have been initiated. In addition, samples from a private library are being rented and logged.

Anaconda has recently acquired many federal tracts near the southern boundary of the Chico area. It appears that the only large block of land, which remains untested where the Westwater sands should have sufficient thickness for large ore bodies, is controlled by the Jemez Indians.

El Dado Area, McKinley County

*Handwritten: El Dado Area, McKinley County, 1/10/73, C.H.S.*  
Sohio, Reserve, Hydronuclear and Conoco have all expressed an interest in contributing toward a hole near, or on, our El Dado claim block.

Reserve also made it known that the three logs gained in a drilling race with Gulf, three miles to the southwest of El Dado, are available for trade. If a trade is made, it will greatly expand our knowledge of the sub-volcanic Westwater.

Sanostee Area, San Juan County

Snows have prevented the completion of the field studies initiated in November. The section measuring and mapping will continue as soon as access can be gained into the area.

MINERALS DEPARTMENT	
JAN 10 1973	
R. P. BLANC	
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MUESSE	
D. A. NICHOLS	
F. J. NICHOLS	
R. M. NICHOLS	
L. C. SMITH	
B. E. WISNIEWSKI	
FILE	

*Handwritten: 1/10/73, C.H.S.*

CVX 00870

January 9, 1973

Oil well samples are being logged to tighten the control on color, thickness and extent of Westwater sands in the Sanostee area.

A deadline of January 31, 1973, has been set by the Navajos for submission of joint venture proposals.

#### General

The Albuquerque office completed its move into expanded office space. Work areas and storage are now adequate.

#### Scouting

Winter weather slowed most exploration. Conoco, Humble, Ranchers, Mobil and Phillips drilled between snow storms but very few holes were completed (see attached map).

#### UTAH

A study of the Morrison ore deposits in southern Utah has been initiated. Information is currently being compiled from state and Federal publications. This data will be supplemented by field work when weather permits.

#### WYOMING

##### Beaver Divide Project, Fremont County

Early December saw futile attempts to complete the first phase of drilling of this project in the face of a Wyoming winter. Five hundred feet of a projected 1450' hole were completed prior to terminating drilling operations. The hole was logged through the drill-pipe and a 27' mineralized zone (maximum of 0.01%  $eU_3O_8$  at 302' in a 2' spike) was recorded which appears cor-relatable with a zone encountered in the upper Wagon Bed Formation in two other holes on the project. The character of the sediments in the zone and the gamma-ray log suggest the hole is located in the barren interior of a "geochemical cell." An interim report of the project is nearing completion.

#### Other

A log trade has been initiated with Homestake-Wyoming Partners of Casper to gain information needed to evaluate a large submittal in the in the northwestern Red Desert.

##### CCI-Getty/Skelly Joint Venture

One additional hole was drilled in the North Butte Excluded Area. This hole was on the unaltered side of the "B" Sand alteration cell edge. Winter weather has precluded further drilling.

CVX 00871

Mr. Robert P. Blanc

-3-

January 9, 1973

CCI-Getty/Skelly-Thunderbird/Pioneer Joint Venture

Drilling was stopped by bad weather on December 15. It will probably resume around March 1, 1973.

CCI personnel are examining the potential low grade areas during the winter lull.

Wyoming Competitor Activity

Severe winter weather and the holiday season brought drilling activity to a virtual standstill in Wyoming.

General

Mr. Robert Barnes attended a 5-day course on Economic Evaluation and Investment Decision Methods at Golden, Colorado, from Dec. 18-22. Messrs. Reim and Wiseman of the Los Angeles Office also attended this course.



CHS:RPB:alr

cc: Messrs. Glenn E. McKinley  
William M. Pennell

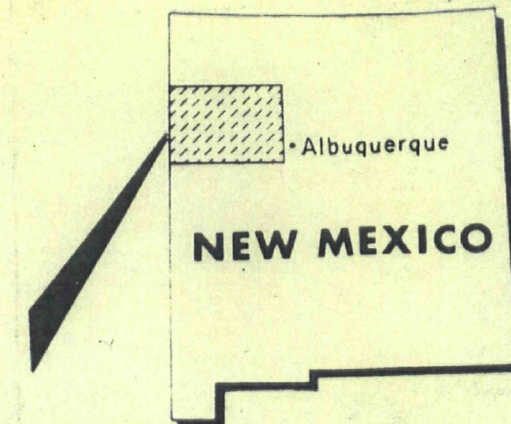
CVX 00872



ARIZONA

NEW MEXICO

# NEW MEXICO PROJECTS



Humble

Phillips

Mobil

Conoco

Church Rock

Ranchers'

SMITH LAKE

AMBROSIA  
LAKE

El  
Dado

Chico



GALLUP

— Ore Deposit

■ Getty Oil Lands

0 10 20

SCALE

GRANTS

Conoco

Canoncito

LAGUNA

ALBUQUERQUE



LAGUNA

CVX 00873



URANIUM

MONTHLY SUMMARY SHEET  
SALT LAKE CITY OFFICE

DECEMBER, 1972

[illegible]

**CVX 00874**

S 428.01

CVX 00875

8234930230

**PARTIALLY SCANNED  
OVERSIZE ITEM(S)**

See document # **2167983**  
for partially scanned image(s).

**CVX 00876**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000

*En C.O.E.*

Salt Lake City, Utah  
October 2, 1970

Minerals Exploration & Mining Dept.	
OCT 5 '70	
Mr. Esch	
Mr. Davis	
Mr. Galt	
Mr. Harbo	
Mr. J. Nowak	
Mr. L. C. Rove	
Mr. S. S.	
Mr. K. M. Re	
Mr. F. J.	

*→ Bel*

TO: MR. ROBERT P. BLANC  
FROM: PAUL A. RIDDELL  
SUBJ: NEW MEXICO: BID SALE OF STATE LANDS

The attached information by Mr. Mohar describes the tracts offered in a bid sale to be held on October 5. In your absence we set in motion the preparation of bids to be offered on Tracts 98 and 99. The sum to be bid is \$1,964.80 (\$3.07/acre) on Tract 98 and \$6,444.80 (\$10.07/acre) on Tract 99.

*Paul A. Ridell*

PAR:alr  
Attachment

cc: Mr. Glenn E. McKinley w/attachment

CVX 00877

S 431.21

9239930230

CVX 00878

BOX NO. WIII

380

FILE FOLDER NO. 11

DOCUMENT COVER SHEET

The attached document was selected as potentially responsive to Westinghouse's Third Request for Document Production - 4th Quarter 1978.

This document should not be permanently removed from this folder nor should this sheet be permanently removed from this document.

- ☐ Responsive
- ☐ Confidential
- ☐ Subject to Secrecy Agreement
- ☐ Privileged
- ☐ Non-Responsive

CVX 00879

Salt Lake City, Utah  
October 16, 1973

MINERALS DEPARTMENT	
OCT 18 '73	
R. P. BLANC	<i>RB</i>
G. F. DAVIDSON	
E. J. DEMETER	
T. L. HUGHES	
C. J. KUNDERT	
H. LAURSEN	
S. MUESSIG	
D. A. NICHOLS	
F. J. NOWAK	
K. M. REIM	
L. S. SOWE	
F. WISEMAN	
ED.	

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH

SUBJ: TRANSMITTAL - KERR-McGEE FARM-IN  
PENA RANCH SUTMITTAL  
McKINLEY COUNTY, NEW MEXICO

*5431.27*

Attached is a preliminary evaluation and recommendations to acquire a 50 percent interest in the 12,480 acres of U. S. minerals and State leases held by Kerr-McGee in the Pena Ranch area, McKinley County, New Mexico.

Most sections have at least one drill hole and in the west side of the township several sections have five to ten drill holes. Mineralization found to date seems to be related to United Nuclear's "barren-red" zone.

It is felt this prospect does offer an opportunity to develop deep uranium mineralization. The prospect must be considered high risk based on drilling depths and sparse mineralization found to date.

Based on our projected 1974 U. S. Uranium Budget and exploration goals, this property is not recommended for acquisition.

I do wonder about the availability of land to the north and east of the area. If land is available by claim location and/or lease, we might consider obtaining a speculative position in the area.

You will note the Albuquerque office has recommended this property. I do not disagree in that this prospect offers as much if not more potential than most properties being offered to Getty/Skelly in the San Juan Basin. It is felt that the U. S. Uranium Program is heavily committed to deep high risk uranium projects at the present time (Ignacio Chavez, Chico, in New Mexico and Poison Spider, Pine Mountain in Wyoming) and additional commitments are not warranted.

The suggestion of acquiring land to the north and east of the Pena Ranch is based on delaying our exploration till 1975.

*Declined*  
*Cecil H. Smith*

CHS:alr  
Attachment

cc: Messrs. Glenn E. McKinley w/attachment  
William M. Pennell

CVX 00880

Albuquerque, New Mexico  
October 10, 1973

TO: C. H. SMITH  
FROM: WILLIAM M. PENNELL  
SUBJECT: KERR-MCGEE'S PENA RANCH SUBMITTAL, MCKINLEY COUNTY, NEW MEXICO

Introduction, Property Description, Terms

On August 9, 1973, Kerr-McGee Corporation submitted their Pena Ranch properties (Plate 1) for Getty Oil Company's consideration of a drill-to earn deal. At that time 470 claims needed assessment drilling prior to September 1, 1973. Since Getty Oil could not evaluate, complete a deal and do the necessary drilling by that date, Kerr-McGee was informed that Getty Oil was not interested at that time but would entertain the submittal during the 1973-74 assessment year. At the present time at least three companies are processing this submittal: Getty Oil was the last to receive it (September 28, 1973).

Prior to September 1, Kerr-McGee drilled four holes and did some road work assessing their claims for the 1972-73 mining year. There are now fifty-four holes on their property which is composed of the even-numbered sections of T. 15 N., R. 9 W., and Sections 2 and 4 of T. 14 N., R. 9 W. (Plate 2). Claims on U. S. minerals and leases on four parcels of New Mexico State lands hold 12,480 acres in these sections. The claims require \$47,000 annual assessment and were acquired in June of 1966. The State lands were leased in April of 1965, and \$1280 in lease payments are due each year. Intervening sections are held by United Nuclear-Homestake Partners.

Kerr-McGee is offering a 50% working interest for exploration expenditures of \$500,000 with a back-out opportunity after the expenditure of the initial \$100,000. This initial money could drill 15 to 20 holes at an average drilling depth of 2300 feet to test the target host, the Westwater Canyon member of the Morrison formation (Plate 3).

CVX 00881



# PENA RANCH

Church Rock



GALLUP

AMBROSIA LAKE

El Dado

GRANTS

LAGUNA

Chico

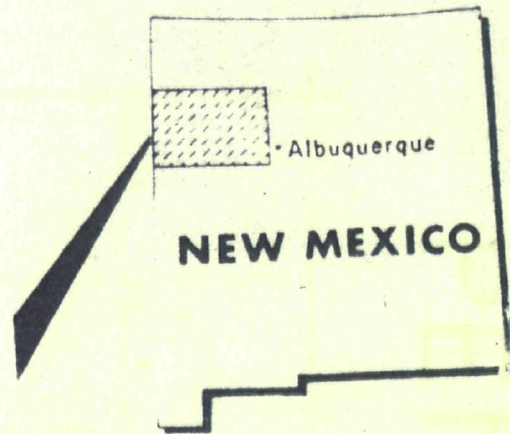
Canoncito

ALBUQUERQUE



— Ore Deposit  
■ Getty Oil Lands

0 10 20  
SCALE



# PENA RANCH

R9W

<div style="border: 1px solid black; padding: 2px; display: inline-block;"> F UN 6 </div>	5	4	3	2	1
KM US	LN F	KM US	UN F	KM S	UN F
7	8	9	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> UN F 10 </div>	11	12
UN F	KM US	UN F	KM US	UN F	KM US KM US
18	17	16	15	14	13
KM US	UN F	KM S	UN F	KM US	UN F
19	20	21	22	23	24
UN F	KM US	UN F	KM US	UN F	KM US
30	29	28	27	26	25
KM US	UN F	KM US	UN F	KM US	UN F
31	32	33	34	35	36
UN F	KM S	UN F	KM US	UN F	KM S
<div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-45deg);"> Not 6 Offered </div>	5	4	3	2	<div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-45deg);"> Not 1 Offered </div>
KM US	HN F	KM US	HN F	KM US	KM US

T  
15  
N

T  
14  
N

KM=Kerr McGee

UN=United Nuclear

HN=Hydro Nuclear

## Land Status

S = State minerals

US = U.S. minerals

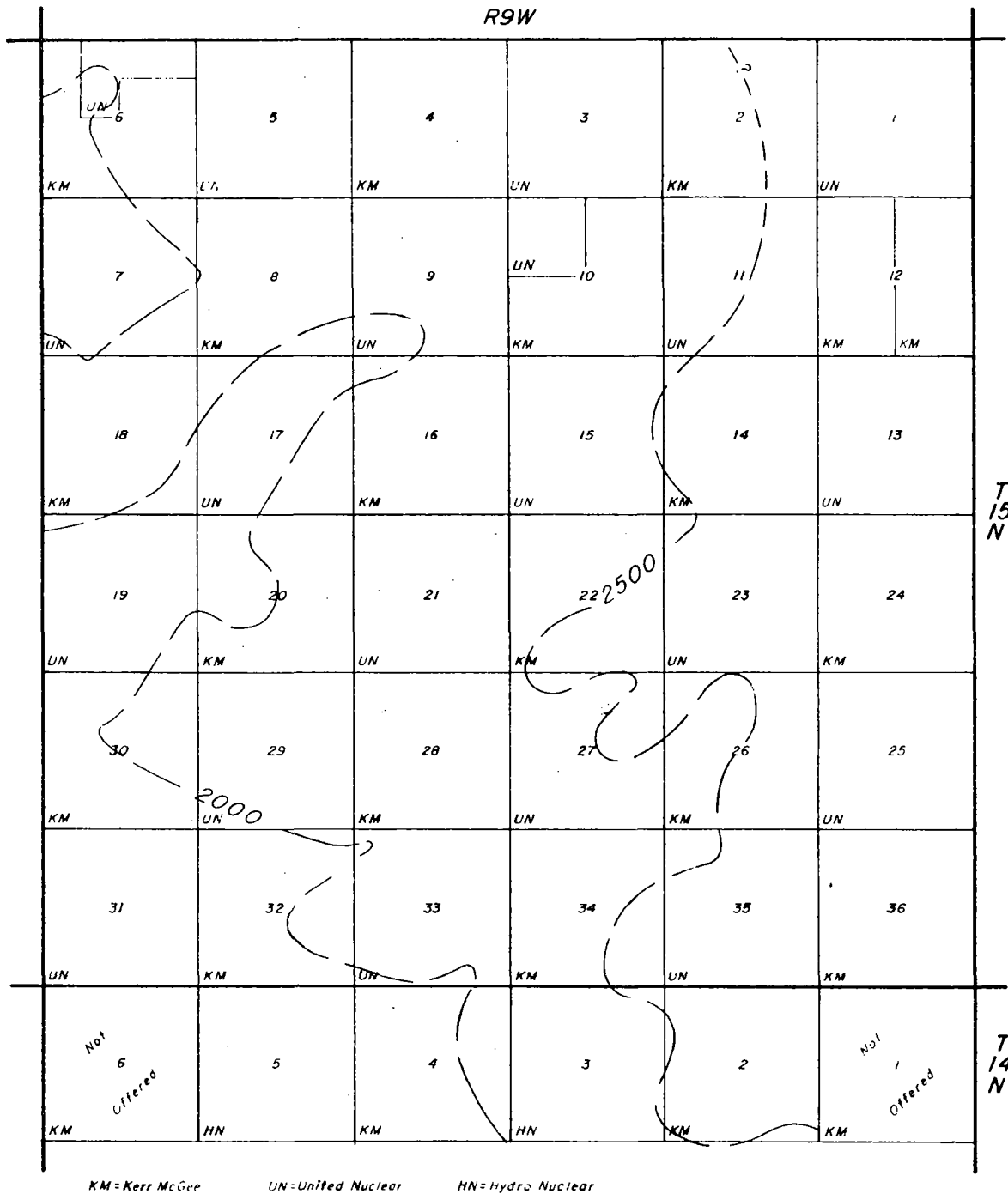
F = Fee minerals

CVX 00883

Plate 2

Getty Oil Company

# PENA RANCH



## GENERALIZED DRILLING DEPTHS

— 2000 —

Drilling depths to test the  
Westwater (ft.)

CVX 00884

Plate 3

Getty Oil Company

Mr. C. H. Smith  
October 10, 1973  
Page 5

#### Results of Previous Drilling on the Pena Ranch

Kerr-McGee has provided electric logs of most of the fifty-four holes previously drilled (Plate 4, in pocket). Some are of very poor quality and others, still on the way from their home office, were not available for use in the following evaluation. Rather than spend the time to make a detailed examination, it was felt more expedient to correlate the logs on working cross-sections, make interval (not bed by bed) interpretations, form opinions on which to make recommendations and transmit the submittal for review. Prior to drilling, if any, a more detailed "sand-by-sand" study, focused at defining specific drill targets, will be necessary.

Over one-half of the drilling has been located in the northwestern corner of the Ranch. The target toward which both United Nuc and Kerr-McGee aligned their exploration programs centered along a northeast-trending fault-zone in this quadrant of the township. Strong mineralization was found by both companies (Plate 4 in pocket). Offset holes, usually 200 feet or more away, were characteristically discouraging. The log of Kerr-McGee's best hole is of such poor quality that it is unreadable -- Kerr-McGee claims it shows a grade in excess of .20%  $\text{eU}_3\text{O}_8$  over an eight foot zone -- but one offset hole of lesser thickness and grade encountered 5.5 feet of .04%  $\text{eU}_3\text{O}_8$ . The values encountered in United's drilling are unknown; however, it is known that at least four areas were found to be mineralized and the mineralization ranged throughout the Westwater section.

To the southwest these faults pass through, or very near, the western end of the Ambrosia Lake Uranium District which is less than four miles to the south. It is believed that the mineralization found to date was derived from ore remobilized down-dip along the fault system. Numerous other faults of similar orientation (similar age?) remain untested within the Ranch. Although Kerr-McGee disagrees, United believes a "barren red" cell can be traced within the Westwater sandstones in the vicinity of the fault zone. Only the western flank of this cell, if it exists, has been tested; the northern end and the eastern side remain as exploration targets. A drilling program should not, however, be restricted to these areas for trend-type ore bodies, if present, may be overlooked (Plate 4 in pocket).

CVX 00885



Mr. C. H. Smith  
October 10, 1973  
Page 6

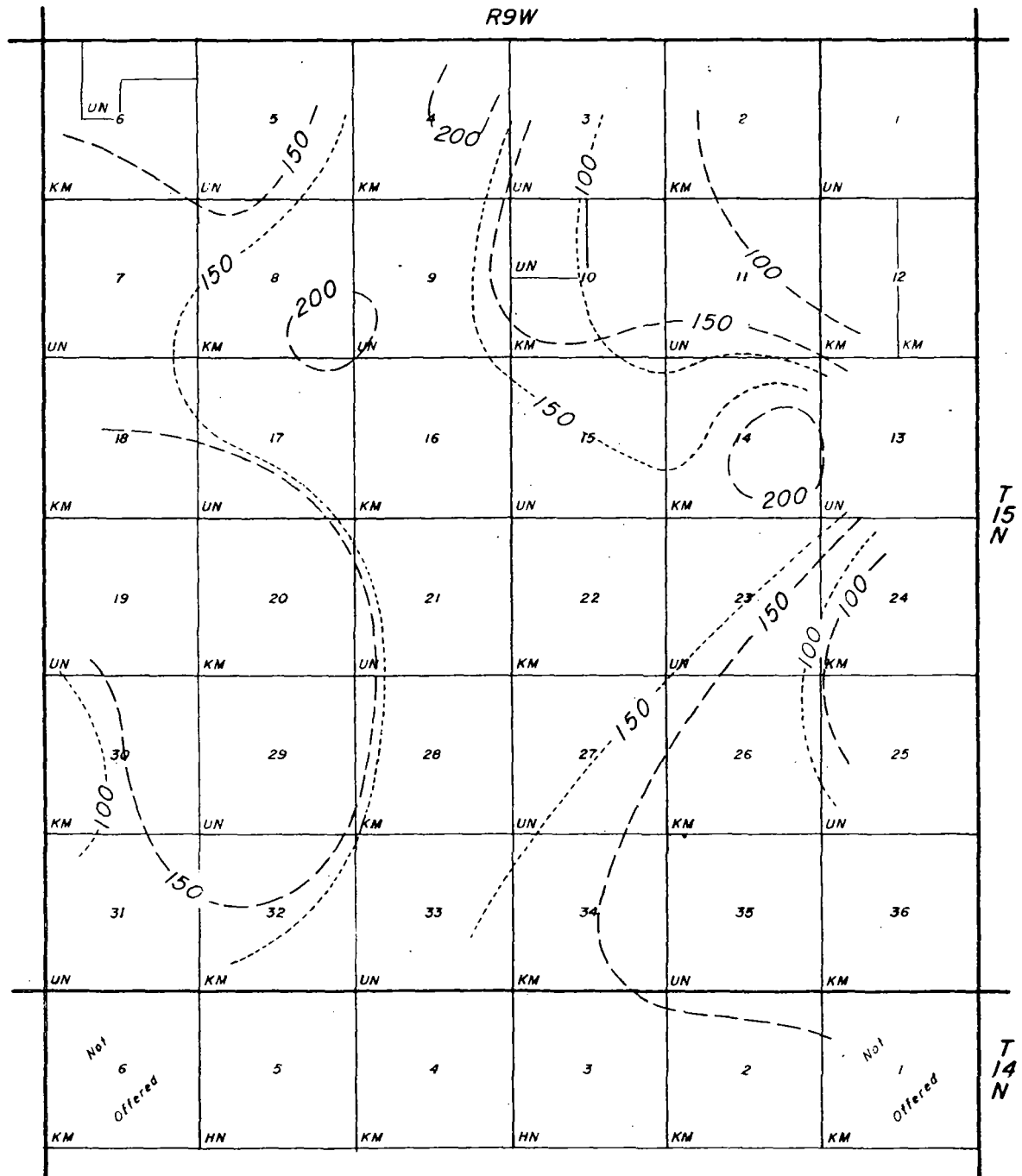
The Kerr-McGee drilling encountered Westwater sandstones throughout the Pena Ranch. Plate 5 details the total thickness, including claystones interbedded with the sandstones. Centered around the area with the least drilling information is a large field with Westwater thicknesses in excess of 175 feet. Although this "thick" has very few tests and its position and size is speculative, the gradations from thin to thick projecting from the northwest, northeast and southeast, attest to its presence. Not only does the Total Westwater Isopach show a thickening in the central portion of the Ranch, but also the Westwater Total Sandstone Isopach (Plate 5) suggests a large area of thick sands in the same general area.

It must be remembered that these sandstone "thicks" are not made of one channel but are the result of the overlapping of many stream channels which meandered across the southern margin of the Jurassic depositional basin. When the areal distribution of individual sandstone intervals are plotted (Plate 6a), it can be seen that the lower and middle sandstones were, with few exceptions, deposited throughout the region. This type of deposition typified periods of basin subsidence, source-area emergence and/or high energy depositional environments. In contrast to this pattern is the more restricted deposition of the upper sandstones (Plate 6b). These sands were deposited at the expense of, or channelled into, the clays and silty shales which were also being deposited in this region. This pattern reflects a relative maturing of the depositional basin, a degradation of the source area, a decrease in the influx of sands and/or a lower-energy depositional environment. Note that the depositional area of the uppermost sand is the more restricted of two upper sands, reflecting the diminution of sand supply. Although more data is needed to pin-down exact orientations, it appears that these upper channel systems trend northeastward or nearly perpendicular to the dominant, regional, southeastward trend of the entire Westwater sand unit.

Plate 7 displays this phenomena in a different manner. Theorizing that the Brushy Basin shale member, which overlies the Westwater Canyon sandstones, is nothing more than the relative absence of large influxes of arkosic sands, it could be expected that the Brushy Basin would be thickest where the Westwater sands are the thinnest and visa versa. In as much as the silty-shales and claystones of the Brushy Basin, as well as a few thin sandstones, are very similar, if not identical, to comparable lithologies in the Westwater, this assumption appears to have an adequate basis. The Brushy Basin Isopach (Plate 7) bears witness that this supposition is probably true.

CVX 00886

# PENA RANCH



KM=Kerr McGee

UN=United Nuclear

HN=Hydro Nuclear

## WESTWATER ISOPACH

—100— Total member thickness (ft.)

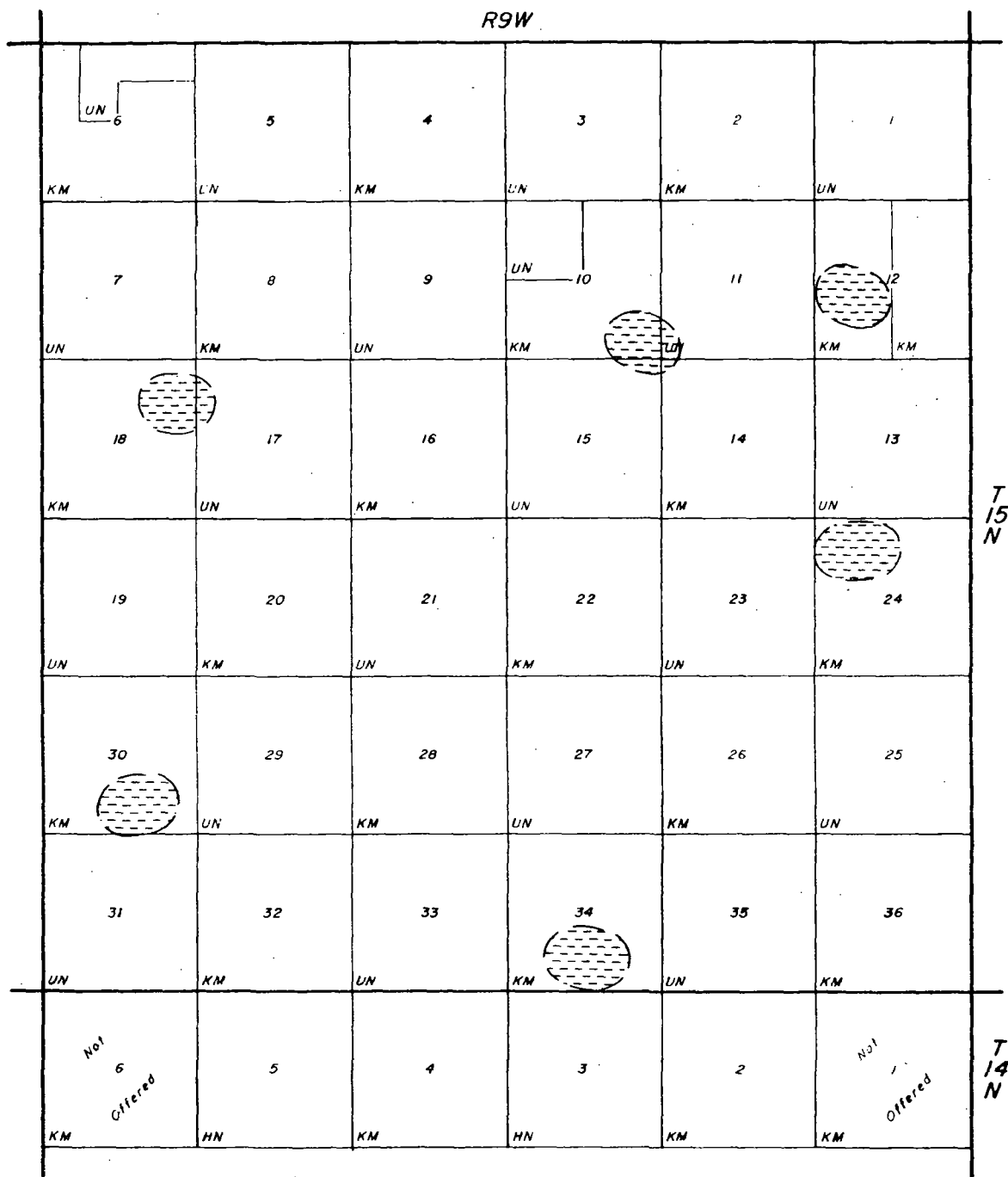
---100--- Total sandstone thickness (ft.)

CVX 00887

Plate 5

Getty Oil Company

# PENA RANCH



## WESTWATER SANDSTONE DISTRIBUTION



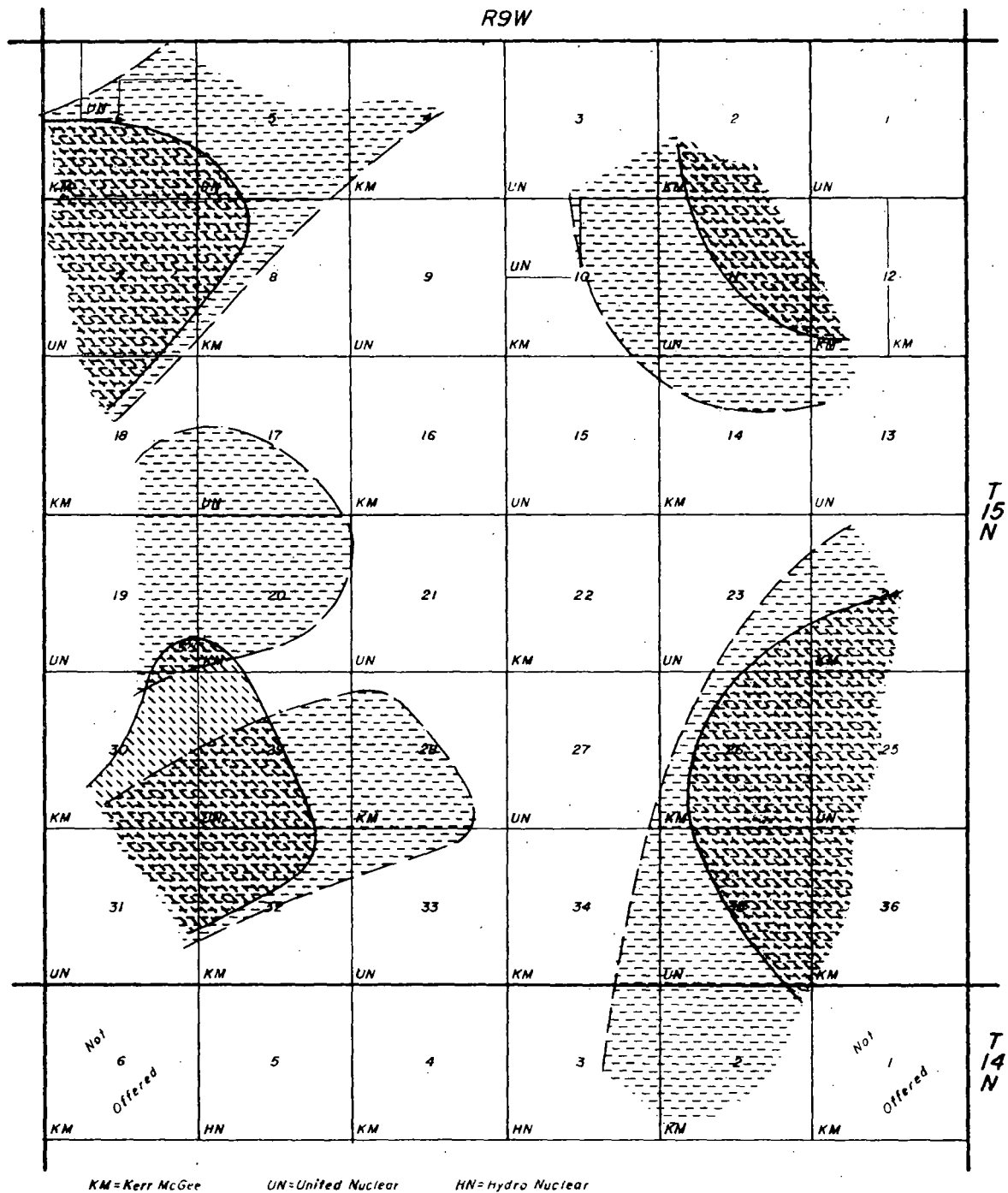
Nondeposition of any one of the middle or lower sands

CVX 00888



Plate 6a

Getty Oil Company

# PENA RANCH



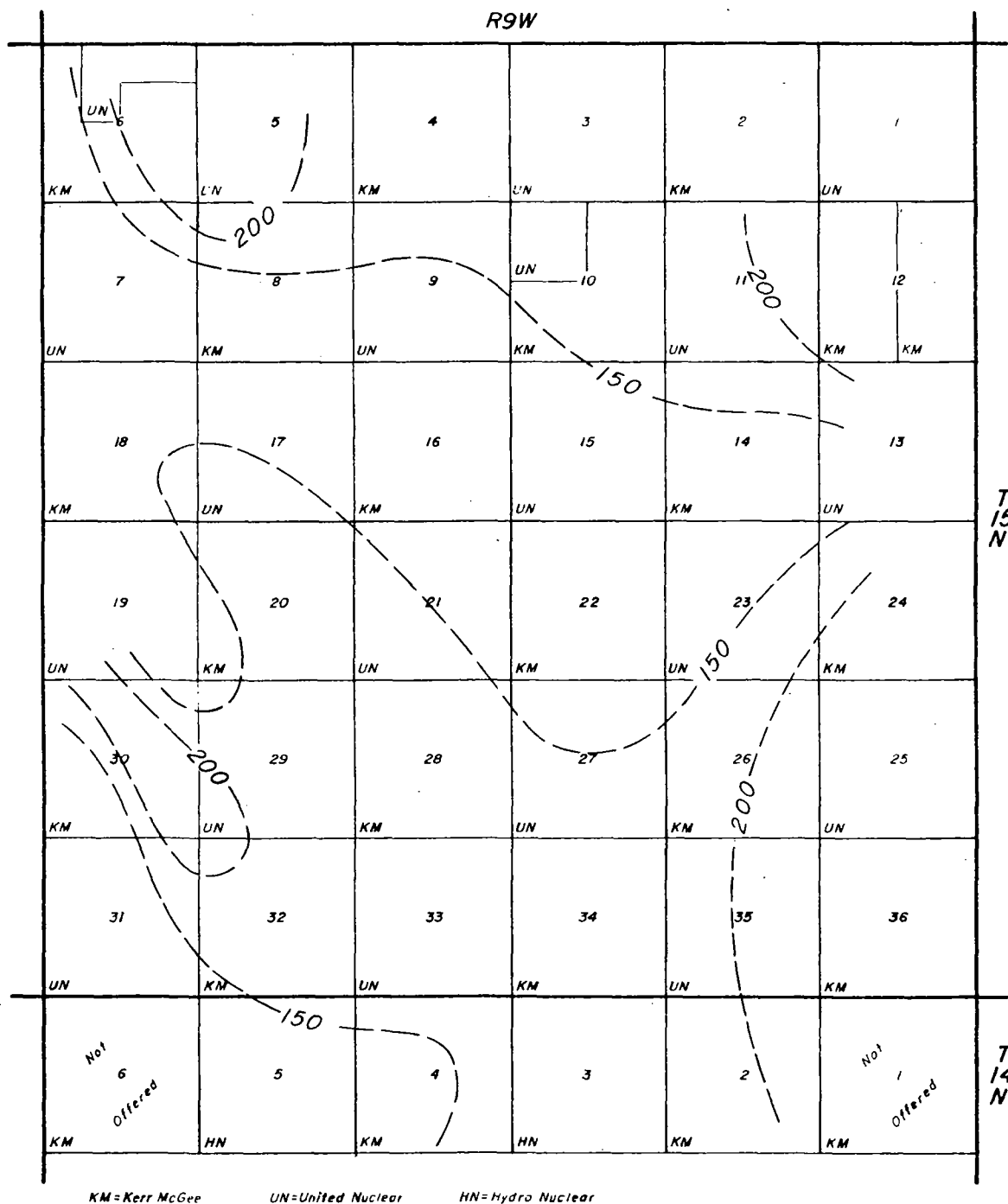
## WESTWATER SANDSTONE DISTRIBUTION

-  Nondeposition of uppermost sand
-  Nondeposition of upper sand

CVX 00889



# PENA RANCH



## BRUSHY BASIN ISOPACH

—150— Total member thickness (ft.)

CVX 00890

Plate 7

Getty Oil Company

Mr. C. H. Smith  
October 10, 1973  
Page 11

The distribution and origin of the upper sands have been stressed for two reasons: 1) the careful correlations and projections of these sands could be used for directing drilling to areas of thick sandstone sections and 2) the genesis of trend ore-bodies is theorized to be tied to the distribution, alteration and truncation of these upper sands. The genesis of trend ore deposits hinges on the localization of humatitic material and, subsequently, its fixing of the uranium from uranium-bearing solutions. The white alteration, associated with the complete kaolinization of feldspars, is believed to be the result of the passage of humic acids: at both Ambrosia Lake and at Church Rock this alteration is usually restricted to the upper sands except where parting shales are absent, and between the districts it is completely absent. The importance of the upper sands has also been noted in the Section 30 mine where the ore is confined to the upper sands except where the intervening shales are missing. In Section 30 this is believed to be due to the higher content of vegetal trash (more humate source?) than found in the lower sands. In addition, it would be the upper sands which were the first to be truncated by pre-Dakota erosion allowing the basinward influx of either (or both) humic or uranium-bearing solutions. The Pena Ranch appears more attractive with the presence of these upper sands than it would without them.

#### Drilling near to the Pena Ranch

Five miles to the west of the Ranch Gulf Mineral Resources has developed over two million pounds of uranium reserves on land farmed-out by Kerr-McGee in 1969. Extensive drilling in areas around this deposit and some exploration on lands between Gulf and the Pena Ranch was completed this past summer by Gulf, Kerr-McGee, Homestake and Ranchers. The results of this drilling is not known.

Very little drilling has been done to the north and east of this township. What information is available shows adequate thicknesses, in excess of 150 feet, of Westwater to the north and east. One hole two miles to the east encountered thick (over 175 feet) sandstones suggesting that the thinning mapped in the Kerr-McGee drilling is local and does not represent the basinward terminus of sand deposition.

Mr. C. H. Smith  
October 10, 1973  
Page 12

Extensive drilling has been carried out to the south - the township in which Ambrosia Lake lies. No known trends have been developed which are directed toward any of the tracts being offered.

#### Discussion and Recommendations

The Pena Ranch has some negative aspects: 1) Kerr-McGee is willing to farm-out the property, and is, therefore, disenchanted with it; 2) the property has been drilled without exciting results; 3) the property lies down-dip from, not on trend with, Ambrosia Lake. However, it must be remembered that 1) Kerr-McGee has a very good land position near producing properties, land with mineralization, and/or land with very little evaluation drilling, and it is against this land position that the Pena Ranch is measured; 2) most of the drilling was concentrated toward only one target in the northwestern quadrant of the Ranch and much awaits an adequate test; 3) until recently the land on which Gulf found their deposit five miles to the west and the land near Crown Point on which mineral has been encountered were considered "too deep" and "off trend."

As Kerr-McGee people stated, "the construction of a new mill for any discovered ore would not be necessary due to the presence of Kerr-McGee's mill four miles to the south. This fact could make an otherwise unviable deposit into an ore body." From Kerr-McGee's viewpoint this is probably correct, but what effect this would have on the present worth of a partner's portion of the ore which would have to be toll-milled is not readily apparent. It is for this reason that I have not included as part of this memo a Quick Economic Analysis of the venture; the assumptions in deriving the QUE Charts do not apply to a partnership with a mill at hand.

The cursory examination of Kerr-McGee's data has yielded the facts that uranium solutions have migrated into the Pena Ranch area, that adequate sandstone hosts exist within both the lower and upper Westwater interval and that sufficient lands remain untested within the areas of thick sandstones to contain a large uranium ore body. Also, what is believed to be the critical upper sands sequence is well developed and traceable in the subsurface.

Mr. C. H. Smith  
October 10, 1973  
Page 13

The asking price seems reasonable, for Kerr-McGee has spent approximately \$500,000 in acquisition and drilling. The \$100,000 back-out should yield enough data to delineate targets worth further expenditures. The initial \$100,000 (\$8.00/acre) is well below the price commonly paid for land of comparable merit, and the \$500,000 (\$40.00/acre) is not excessive if encouragement demands further evaluation. In addition, all money goes "into-the-ground."

It is recommended that Getty Oil attempt to acquire a 50% interest in Kerr-McGee's portion of the Pena Ranch. During discussions with Kerr-McGee the possibility of their including Sections 1 and 5 of T. 14 N., R. 9 W., for no additional expenditures, should be explored; no special merit is associated with these sections other than providing an increase in the land block toward Ambrosia Lake. Any reductions in the asking price would be advantageous but do not appear critical.

W. J. Penner

WJP/fe

CVX 00893

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**CVX00894**

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(415) 536-2000

12/12  
MR Blanc  
See my notes

Salt Lake City, Utah  
November 18, 1970

Minerals Exploration & Mining Dept.	
NOV 19 '70	
R. P. Blanc	
F. Davis	
A. Green	
J. H. Hulse	
<hr/>	
T. J. Nowak	
L. C. Rove	
S. Siegfus	
K. M. Reim	
F. J. Madison	

TO: MESSRS. R. P. BLANC  
G. E. MCKINLEY

FROM: PAUL A. RIDDELL

SUBJ: NEW MEXICO - REPORTS BY JOHN MOHAR  
1) Bokum Corporation  
2) Homestake Mining Co. Claims

The two reports, attached, were recently completed by Mr. Mohar. In the press of tending to Cleveland Cliffs' affairs I have not had time to review them in detail. They are being forwarded to you for review prior to reviewing same in this office.

Mr. Mohar has suggested that at this time, acquisition of the Bokum, Amerada and Homestake situations would add substantially to the Joint Venture's reserves and provide good prospective land for testing. The sum of money to complete these transactions would, of course, be large.

*Paul A. Riddell*

PAR:alr  
Attachments

CVX 00895

TO MR BRANE DATE 12/12 TIME   

COULD WE HAVE  
ALBQ. SEND THE 1129,000  
TBRD OVER SO WE CAN  
TAKE A LOOK —

☐ APPROVAL  
☐ FILE

☐ PLEASE PHONE  
☐ WISHES TO SEE YOU

Summit

FORM GO 20-1 JULY 70

CVX 00896

Salt Lake City, Utah  
December 2, 1970

Minerals Exploration & Mining Dept.	
DEC 4 '70	
R. P. Blanc	
G. F. Davidson	
N. A. Grant	
C. J. Kundert	
<del>S. Maessig</del>	
F. J. Nowak	
L. C. Rove	
S. Siegfus	
K. M. Reim	
F. J. Madison	

TO: MR. ROBERT P. BLANC

FROM: PAUL A. RIDDELL

SUBJ: NEW MEXICO: RECOMMENDATION OF ACQUISITION  
SAN MATEO AREA

Our recent cursory land checks in the San Mateo-Laguna area indicates some 16 sections to be available for lode claim location. Confirmation work is now underway to ascertain the availability of this ground. There appears to be no posts or other evidence of staking on the ground. Current work is directed to determine if "paper locations" exist in the court house.

These lands, while deep, comprise some of the only "open" acreage in the district and are held to be as prospective as much of the Homestake acreage previously submitted. Drilling will be deep and expensive, as the problem of penetrating the lava cap must be considered in addition to the depth.

Burley's estimate for doing the staking work appears reasonable. In optimum terrain in Wyoming we have paid \$50 to \$80 per claim, not including the filing fees and paper work.

Your reaction to John's recommendation would be appreciated. I would be in favor of proceeding to acquire the ground.



PAR:alr  
Attachment

cc: Messrs. Glenn E. McKinley w/attach.  
John Mohar w/o attach.

CVX 00897



November 25, 1970

To Mr. J. B. Kiddell

Front J. Mohar

from J. Mohar, El Paso, New Mexico

Subject: Land Acquisition; San Mateo

As you know, we have been conducting land checks in areas where we felt there might be some open land along a belt from San Mateo to Laguna. Preliminary work has revealed the strong possibility that approximately 10 sections of land are open and can be acquired by staking in the area east of the Bartolome Fernandez Grant. The land lies in the National Forest north of Mt. Taylor and within four miles of the Brown discovery. Adjoining lands are held by Cerachewey, Gofum and So-lo. There is also a thick test water section and is also similar to the So-lum

The land is probably situated over a thick freshwater section and is along the trend of known ore deposits. The land is situated similar to the Sukum properties, e.g. on top of the Mt. Taylor volcanic field. The line seems to be a fault line. The fault would be quite deep and expensive. The fault is on the west flank of the Mt. Taylor volcanic field. The elevation is about the same as the Sukum deposits. The composition is of the same nature. The influence of the Sukum deposits is evident at the surface. The fault has been active and may have influenced the position of the fault. The relationship of both the Sukum deposits and the position of the fault is relative to the Sukum deposits. The Sukum deposits are in the position relative to other properties and the Sukum deposits.

Carl Burlev, the landman doing the checking for us, does claim staking work and has estimated the cost of staking this area. His estimates are:

5.87  
50.00  
46.04

The sections of land

L. The sections of  
the mining claims

1. The sections  
2. 578 low mining claims  
3. total cost = \$50,000 to \$55,000 to stake, validate and  
4. plate 105. This figure also includes delays due to probable  
5. adverse weather at this time of year.  
6. The cost of  
7. to acquire this land. The cost of  
8. of co

where 185 acres is required  
adverse weather at this time of year.  
It is recommended that Getty Oil acquire this land. The cost of acquisition, \$4,500 per acre, is very reasonable relative to the going price of comparable lands available from other operators. Granted the weather is very deep and exploration costs would be high, but it would not be necessary to do an extensive program immediately. It would, in fact, be prudent to postpone any drilling until the 1971-1972 mining year in view of the costs. A delay would give adjacent operators the opportunity to possibly discover additional deposits near to the property and aid in our evaluation. A program of two or three holes per year for four or five years would probably be the best exploration approach and would be adequate to maintain the property. Another problem which may pop up would be the U.S. Forest Service. They may attempt to prevent the claim staking and have been known to file suit to invalidate mining claims in the forest.

CVX 00898

If approval is granted to acquire these lands, it is suggested that the staking begin as soon as it is determined with certainty that the lands are indeed open. It is very likely that at this time of year the weather will be a problem but this may actually help by slowing up the competition and also by keeping them unaware of our activity.

*John M. ...*

CVX 00899

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for partially scanned image(s).

**CVX 00900 - CVX 00901**

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(415) 536-2000

Salt Lake City, Utah  
August 4, 1970

Minerals Exploration & Mining Dept.	
AUG 7 '70	
<i>Info discuss</i> →	R. P. Blanc
	G. F. Davidson
	N. A. Grant
	C. J. Kundert
	F. J. Madison
	<del>S. Muessig</del>
	F. J. Nowak
	L. C. Rove
	S. S. S.
	K. M. S.
→	File

TO: MESSRS. S. MUESSIG  
R. P. BLANC  
G. E. MCKINLEY

FROM: PAUL A. RIDDELL

SUBJ: CONVERSATION WITH KEN BAKER  
AMERADA-HESS

This morning I called Ken to take his pulse on Amerada's situation in regard to their New Mexico and other properties. The following information fell out of the discussion.

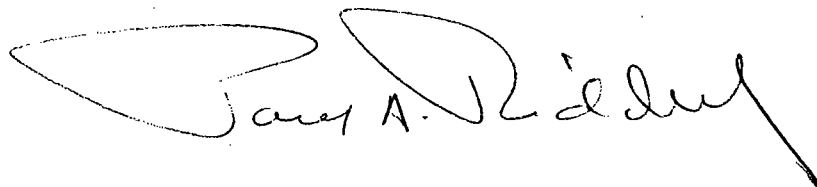
- 1) Amerada-Hess has provided budget for the remainder of 1970 to continue drilling on the Fernandez Ranch (Lee Ranch). Previously they had been working with four rigs. This has been cut to two rigs.
- 2) Amerada-Hess has joined with Bokum and Kerr-Adamex in the deep drilling project east of the Fernandez Ranch. Currently there are five rigs working on this project. Holes are costing \$30,000 to \$50,000 each--a few are even more expensive.
- 3) Continued discussion with AH's Tulsa office indicates they will eventually sell their interest in the Fernandez ore body, but no time schedule has been determined. Ken thought a development along these lines could happen before Christmas.
- 4) It was mentioned that they might be interested in farming out about half of the Fernandez Ranch (probably the deep half). He will furnish me more particulars on this after talking with Kerr-Adamex.
- 5) Drilling has essentially been completed on the main Ranch ore body. He said there were some "open" trend areas northwest of the ore body but most of the needed offsets had been drilled.
- 6) To be more comfortable with an economic appraisal prepared by Kerr-Adamex, A-H used a number of consultants to give a support appraisal. His comments on these were as follows:

CVX 00902

- a) Robertson & Associates did the ore reserve calculations and did a good job.
- b) Chapman, Wood & Griswold (Albuquerque) furnished mining costs and were excellent.
- c) Western Knapp and Arthur J. McKee did the mine-mill appraisal and were well qualified.

Ken said he was well satisfied with the approach of using special consultants for each phase of the investigation. (It could be we would wish to consider such an approach if the CCI situation hits a snag).

- 7) A-H has dropped their Three Forks, Montana leases.
- 8) They wish us to reappraise their Dillon, Montana acreage.



PAR:alr

cc: ICT, Jr.  
DAN  
JM  
HLR, Jr.

CVX 00903



S 43.273

CVX 00904

0259950030

→ DA

4/29

cc to Mr William  
4/29/76

This is second project (Mr.) Skelly  
has dropped out of. I believe  
they have the right to do so -  
but it complicates matters -  
& if carried too far - would  
be "unfair" to Getty (therefore, not  
worth continuing our ch. VI.)  
- Question to you - what are the  
specifies & the intent of our agreement  
in this case. 1882.



# SKELLY OIL COMPANY

TULSA, OKLAHOMA 74102

March 24, 1976

Mr. Cecil H. Smith  
Getty Oil Company  
P. O. Box 15037  
Salt Lake City, Utah 84115

Dear Cecil:

Re: Ignacio Chavez 1976 Program

The results of drilling accomplished in 1973, 1974 and 1975 on the Ignacio Chavez Grant, Sandoval and McKinley Counties, New Mexico, by Pioneer Nuclear, have been carefully reviewed by this office.

We have concluded that Skelly should no longer continue to participate or partially fund the further drilling proposed for this acreage.

Sincerely,

ORIGINAL SIGNED BY  
ARNOLD BUZZALINI

A. D. Buzzalini

ADB:pc

cc: Mr. R. P. Blanc ✓  
Mr. G. E. McKinley

*Discuss w/ SM.*  
*Ball in LA*  
*look at agreement*

MINERALS EXPLORATION	
MAR 30 '76	
R. P. BLANC	<i>BBB</i>
S. MUESSIG	
D. A. NICHOLS	
W. M. PENNELL	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

*Mr. W. Williams*

*2 Please note above  
& advise accounting as  
required.*  
*BBB*

CVX 00906



## 1976 IGNACIO CHAVEZ JOINT VENTURE REPORT

Thirteen holes were drilled on the Ignacio Chavez Grant in 1975. Two of these holes were weakly mineralized. The anomalous zone in IC-14 is in the Recapture, 120 feet below the base of the Westwater. This mineralized zone in the Recapture is deeper than we tested up to that time. From IC-16 on we took all the holes deep enough to intercept this Recapture zone. Hole IC-20 encountered weak mineralization in what we think is the Jackpile. Sloughing of the Jackpile prevented open hole logging of the mineralized zone. Depending on how large the hole had become due to sloughing the mineralization will probably range between 0.01% to 0.005%. The cuttings data from the last thirteen holes was much higher quality than that obtained on the initial twelve holes. Three holes in the 1975 drilling and three holes from 1974 are classified as oxidized. Hole IC-14 has the heaviest oxidation of any Ignacio Chavez Grant hole drilled to date. The remaining ten holes from 1975 are classified as reduced as are six holes drilled in 1974. We didn't obtain any cutting data from three 1974 holes. Oxidized-Reduced data is plotted on the map along with Westwater and Jackpile thickness' and it's also listed in Table 1. Table 2 lists some drilling and cost data.

We think that the uranium ore genesis models presented by Squyres (1970) and Kendall (1971) are the most useful working hypothesis to guide exploration on the Grant. Squyres proposes that the mineralizing solutions moved in the same directions as the surface flow (ESE), & that mineralization occurred shortly after the formation of organic masses during Jurassic time while later Morrison sediments were being deposited. He feels that deep orebodies that are far from outcrops will not have the diffuse, spotty halos of anomalous uranium which accompanies ore bodies in the Grants Trend. The Phillips deposit may add some credence to this model. Kendall's model makes an analogy between the Grants deposits and Wyoming roll fronts. The red oxidized ground between the outcrop and the ore trend is the source area for the uranium so this model requires an oxidized reduced interface.

MINERALS EXPLORATION	
FEB 2 '76	
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CVX 00907

Using the Kendall model on the Ignacio Chavez Grant would require some additional drilling between our oxidized and reduced holes. Also we might want to test the area north of the Grant since the Chico No. 1 hole in 27 of 17N, 6W was heavily limonite stained. Squyres lists a number of ore guides and except for Magnetite distruction they are all listed on Table A of this report.

In 1976 we propose to drill 12 holes on the Grant. Four holes will be 500 foot offsets of holes IC-14 and IC-20. The other 8 holes will be spaced at least a mile from the closest hole - the exact location could be determined at the joint venture meeting.

If the 1976 drilling does not provide us with any better specific drilling targets than we have now we suggest either holding the property until drilling outside the Grant suggests a trend which crosses the property or trying some kind of geochemical exploration technique.

Ray Morley  
Pioneer Nuclear, Inc.  
Geologist

RM/kas

CVX 00908

## GEOLOGIC SUMMARY

TABLE 1

HOLE NUMBER	MINERALIZED	OXIDIZED OR REDUCED	PYRITE	HEMATITE AND OR LIMONITE	CARBONACEOUS MATERIAL	THICKNESS	
						Jmj	Jmw
1	No	Red.				18	265
2	No	Ox.				20-55	187
3	No	Red.				20-48	214
4	No	Red.				22-77	207
5	No						252
6	No	Red.					191
7	Jmb-1.5'-.01%	Ox.					195
8	No	Red.				0-77	204
9	No					35	250
10	No	Red.					160
11	No	<del>Red.</del> Ox.					246
12	No						283
13	No	Red.	Trace	Tr. Both	Trace?	0	121
14	Jmr-2'-.01%	Ox.	Moderate	Tr. Hem. Abun. Limon.	Abun?	0	129
15	No	Red.	Trace	Tr. Both	Trace?	0	147
16	No	Red.	Trace	Tr. Both	None	0	302
17	No	Red.	Mod.	None	None	0	223
18	No	Ox.	Mod.	Mod. Limon.	None	0	236
19	No	Red.	Trace	Tr. Both	None	21	187
20	Jmj-1'-.01%	Red.	Mod.	Tr. Limon.	None	27	177
21	No	Red.	Abundant	Mod. Limon.	None	22	174
22	No	Ox.	Mod.	Abun. Limon.	Trace?	14	187
23	No	Red.	Mod.	Tr. Both	None	14	142
24	No	Red.	Trace	Tr. Limon.	None	24	168
25	No	Red.	Mod.	Tr. Limon.	Trace?	18	282

CVX 00909

# DRILLING SUMMARY

TABLE 2

HOLE NO.	ESTIMATED DRILL DEPTH	ACTUAL DRILL DEPTH	DRILL TIME DAYS	ESTIMATED DRILL COST	ACTUAL DRILL COST*	FLOWING HOLES
IC 13	3110	3120	6	12,328	12,406.60	No
IC 14	2480	2840	4	8,002	9,956.13	No
IC 15	3000	3100	7	11,080	11,447.34	10gpm/shallow
IC 16	2890	2960	6	10,475	11,162.55	No
IC 17	3090	3160	7	12,328	11,900.83	No
IC 18	2820	2960	6	12,328	12,615.55	No
IC 19	2190	2260	4	10,004	6,452.31	30gpm/Kg
IC 20	1810	1980	5	6,719	5,960.49	30gpm/Jmw?
IC 21	1780	1780	4	6,234	4,948.47	50gpm/Jmw
IC 22	2080	2080	14	5,795	7,552.06	No
IC 23	1970	2100	4	4,508	6,163.36	No
IC 24	1520	1640	3	5,251	4,384.49	100gpm/Jmw
IC 25	3070	3060	8	5,337	11,089.66	No
	31,810	33,040	78	110,389	116,039.84	

Estimated - earthwork, probing, misc. = \$26,111

Estimated 1975 Total = \$136,500

\*Actual - earthwork, probing, misc. = \$23,960

\*Actual 1975 Total = \$140,000

\*The Actual Costs are based on billing to date and are thought to be very close to the final amount.

CVX 00910

WR

Regarding The Questions Getty Brought up  
At Last Year's Joint Venture Meeting:

- "1. WHAT DO WE BELIEVE ARE THE NECESSARY (GEOLOGIC?) FACTORS FOR THE OCCURRENCE OF AN ECONOMIC URANIUM DEPOSIT?"

Favorability criteria have been listed by many authors. Table A lists our interpretation of I. C. G. drilling data compared to Lucius Pitkin 1974 p. 80 - Favorability Criteria and the ore guides listed by Fitch 1971.

The only criteria which is unquestionably negative is that the I.C.G. is not located in the Grants mineral belt. Also we don't appear to have an interface between oxidized and reduced Jmw sandstone and maybe the sandshale ratio is too high.

- "CAN WE RECOGNIZE THEM (FAVORABILITY CRITERIA LISTED ABOVE) WITH CURRENT TECHNIQUES?"

We feel the data obtained from the 1975 drilling was sufficient for us to recognize the ore guides and favorability criteria listed above. More sophisticated sampling techniques would probably not provide data of sufficiently higher quality to justify the cost.

- "A. HUMATE SOURCE FROM THE DAKOTA?"

This model requires the humate generated in Dakota swamps to enter the Westwater at it's erosional edge in early cretaceous time. If this model is correct the chances for mineralization north of the present trend is slim.

- "B. CARBON TRASH WITHIN HOST?"

It's our prejudice that decayed Westwater age vegetal material is the source of the reductant in Grants type deposits.

- "C. SHALE -SAND INTERFINGERS?"

Some workers feel that a sand shale ratio of 1:1 is optimum - we're not sure how important it is.

- "D. SANDSTONE THICKNESSES IN EXCESS OF 50' FOR THE JACKPILE AND 125' FOR THE WESTWATER (RECAPTURE)?"

Opinions appear to vary on optimum host rock thickness. On the I.C.G. the Westwater thickness is close to that found in mineralized areas. Our electric log picks on Jackpile thickness are uncertain and may be too thin. Experience with Jackpile deposits indicate they don't always correlate between thickness and mineralization.

- "E. FOR REMOBILIZED ORE--A RECOGNIZABLE ALTERATION--IS THERE CONTROL, POSSIBLY FAULT CONTROL, POSSIBLY GROUND WATER FLOW CONTROL?"

We don't appear to have enough oxidized sands on the I.C.G. to make remobilized ore an important target. Our present exploration methods should be as effective for locating remobilized ore as it will be in finding the primary ore bodies we think may be present.

CVX 00911

"F. A URANIUM SOURCE?"

If uranium was leached from Morrison sediments by northward flowing streams in early Cretaceous time resulting in oxidized ground south of the trend and uranium deposition a short distance north of the oxidized reduced interface - then the prospects for ore on the Chavez Grant are slim (For details see Kendall 1971). We prefer the model proposed by Squyres (1969) in which the uranium is derived from volcanic detritus in the host sediments and transported in ground water which is moving parallel to the major stream direction that is ESE. If this model is correct the I.C.G. is much more prospective.

"2. WHAT SHOULD PHASE I ACCOMPLISH?"

In Phase I we should obtain enough data to allow us to classify the property according to the criteria outlined in Table A. We have drilled 25 holes to date and have no areas which appear unfavorable. There are 16 sections on the west side and 14 on the east side which have relatively flat topography and relatively easy drilling. We've drilled 16 holes on these accessible 30 sections for a drilling density of 1 hole per 2 sections. On the 46 sections in the central part of the Grant we've drilled 9 holes - less than 1 hole per 5 section.

"A. ESTABLISH A STRATIGRAPHIC FRAMEWORK."

We think the stratigraphic framework is 80% complete on the east and west side.

"B. ENCOUNTER ALTERATION AND OR MINERALIZATION."

We have weak mineralization and oxidation alterations.

"C. DEFINE PHASE II TARGETS?"

The probability of encountering encouraging mineralization in Phase I is remote. It should be possible to define an oxidized-reduced interface with wide spaced drilling.

"D. PROVIDE DATA TO DETERMINE IF THE PROSPECT IS BETTER OR WORSE THAN WHEN ACQUIRED."

We feel the prospect is better than when acquired because the potential host rock appears to be favorable based on the criteria listed in Table A. Also the drilling and artesian water problems are not as severe as originally anticipated.

"E. PROVIDE DATA TO DETERMINE HOW MANY HOLES WILL BE NECESSARY BEFORE A DECISION CAN BE MADE TO DROP."

Based on the data obtained from 25 holes the only negative information we have on the property is: (1) We don't appear to have a large oxidized-reduced interface and (2) We don't have an enormous ore body. Experience along the trend indicates that on the average 7 holes per section are drilled in favorable ground and if no anomalous mineralization is found the property is dropped. Although 7 holes per section is unreasonable until drilling outside the Grant indicates the property is on a mineralized trend we feel that the lease is cheap enough to let us hold the property in anticipation of future favorable events.

"3. WHAT HAVE WE FOUND?"

See Table A and enclosed maps and logs.

CVX 00912

"A. JACKPILE LIMITS AND PROBABLY RANGE OF THICKNESSES."

Drilling to date has outlined an area of Jackpile that we think is large enough and thick enough to have mineral potential.

"B. WESTWATER THICKNESSES SIMILAR TO THOSE IN PRODUCING AREAS."

The Jmw ranges from 121' to 302' thick which is similar to the range found in producing areas.

"C. PYRITE (?), HEMATITE (?) -- SIGNS OF ALTERATION."

We have limonite stained sands which may be related to Laramide doming and faulting. On the north side of the Grant oxidized sands may be related to an extensive oxidized reduced interface although at this time we think the interface is north of our property. Pyrite is abundant in most of the holes we've drilled.

"D. RECAPTURE e-LOG CHARACTER SIMILAR TO KERR MCGEE'S."

Hole IC-14 mineralization may be in the same zone as some of the ore in Marquez.

"E. POSSIBLE DAKOTA TRUNCATION OF JACKPILE."

We're not sure.

"F. ONE SMALL KICK...DO WEAK KICKS AT THE BASE OF SANDS HAVE MEANING?"

Our mineralization is not extremely encouraging but we do feel it's worth offsetting.

"4. WHAT CAN WE HOPE TO FIND WITH FURTHER EXPLORATION, AND CAN DIFFERENT PROCEDURES BE OF HELP?"

We propose to test our small kicks and drill a few more Phase I holes - if at that time we have no additional mineralization anomalies to offset then some different type of prospecting procedure might be worth trying.

"A. ORIENTATION OF INDIVIDUAL SANDSTONE BODIES (IS THIS SIGNIFICANT?)."

We feel this type of analysis is of limited value until we get a number of holes per section.

"B. ALTERATION, GRAIN SIZED, GEOCHEM FROM SAMPLE ANALYSES (WOULD CORE BE OF HELP?)."

Core would only be useful to confirm our interpretation of the drill cuttings. The exploration decisions we propose are not critical enough to justify the expense of coring. Geochem samples could probably be obtained cheaper with a side wall sampler. Ground water samples are a possibility. We will explore all these possibilities after the 1976 drilling.

CVX 00913

"5. ARE WE TO THE POINT OF DEFINING DISCRETE DRILLING TARGETS AND IF NOT, WHEN WILL WE BE?"

In 1976 we propose to offset the two mineralized holes we drilled this year and put down a few more wide spaced holes. Except for the two marginal targets we propose to offset in 1976, Phase I has not defined any discrete drilling targets and the probability of defining any with 12 additional holes in 1976 is low.

CVX 00914



TABLE A

LUCIUS PITKIN	ICG	FITCH	ICG
1. Stratigraphic position	ok	1. Anomalous mineralization	1 or 2 holes
2. Sand Thickness	too thick	2. Color of host rock	ok
3. Sand percent	too high	3. Position vis-a-vis trend	negative
4. Lithologic variation	ok	4. Presence of carbon & pyrite	ok
5. Dip of host rocks	ok	5. Bleaching of mudstone	?
6. Faulting & fracturing	ok	6. Relative thickness	ok?
7. Radioactivity	3 holes	7. Stratigraphic environment	ok
8. Texture	ok		
9. Color	?		
10. Cementation	ok?		
11. Carbonaceous material	ok?		
12. Mineralogy	ok		

IGNACIO CHAVEZ JOINT VENTURE MEETING

December 11, 1974

QUESTIONS:

1. What do we believe are the necessary factors for the occurrence of an economic uranium deposit? Can we recognize them with current techniques?
  - A. Humate source from the Dakota?
  - B. Carbon trash within host?
  - C. Shale - sand interfingers?
  - D. Sandstone thicknesses in excess of 50' for the Jackpile and 125' for the Westwater (Recapture?) ?
  - E. For remobilized ore--a recognizable alteration-- is there control, possibly fault control, possibly ground water flow control?
  - F. A uranium source?
2. What should Phase I accomplish?

Possibly:

  - A. Establish a stratigraphic framework
  - B. Encounter alteration and/or mineralization
  - C. Define Phase II targets
  - D. Provide data to determine if the prospect is better or worse than when acquired
  - E. Provide data to determine how many holes will be necessary before a decision can be made to drop.
3. What have we found?
  - A. Jackpile limits and probably range of thicknesses
  - B. Westwater thicknesses similar to those in producing areas
  - C. Pyrite (?), hematite (?) -- signs of alteration
  - D. Recapture e-log character similar to Kerr-McGee's
  - E. Possible Dakota truncation of Jackpile
  - F. One small kick...do weak kicks at the base of sands have meaning?
4. What can we hope to find with further exploration, and can different procedures be of help?
  - A. Orientation of individual sandstone bodies (is this significant?)
  - B. Alteration, grain sizes, geochem from sample analyses (would core be of help?)
5. Are we to the point of defining discrete drilling targets and if not, when will we be?

WILLIAM M. PENNELL

CVX 00916

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: I.C. #13

DATE COMPLETED: Oct 6 1975

PROBE DEPTH: 3105

COLLAR ELEV: 6660

DRILLER & RIG NO: C. Jones # 11

LOGGED BY: Rm

TOTAL DEPTH: 3120

PROBED BY: A. Hurlbut

CORE REC'D: —

NOTES:

ELECTRIC LOG		Microscope <del>DESCRIPTION</del>	DESCRIPTION	MICROSCOPIC DESCRIPTION			
Dr. Sz.	Remarks	Carb.	Alter.	Fe S2	Remarks		
F	out limonite stained grain, Abund. Mancoes	—	—	Mass. Tr.	Gry. Yel. Grn. Sh. & Cam., Tr. Gry. Or. Feld., Wht. Sh.		
F	"				A/A		
M	well sort, v. clean				Qtz. Sand, Tr. Gry. Or. Feld.		
F-M	A/A				A/A		
M	limonite may be from steel.	—	?	Mass. Tr.	Wht. Sh., Frosted Wht. coated Qtz., Tr. Gry. Or. Feld.		
F-C	"		?	"	A/A		
F	Abund. Mancoes			Tr.	Gry. Yel. Grn. Sh., Wht. Sh., Tr. Feld.		
F	"			Tr.	A/A		
F	"			Tr.	A/A		
F	"			Tr.	A/A		
F	Mancoes, Pale Red Sh.			Tr.	A/A		
F	"			Tr.-Mod.	A/A plus Frosted Sh. Wht. Coated Qtz.		
F	"			Tr.-Mod.	A/A Some Feld. & "		
M	"			<Tr.	A/A		
F	Abund. Qtz. Sand, "			Tr.	A/A		
F	A/A				A/A		
F	A/A		?	Tr.	A/A		
F	A/A		?	<Tr.	A/A		
F	A/A				A/A		
F	Abund. Pale Red Sh.				A/A plus distinctive red speckled sh. & c.		
F	"				A/A Frosted Wht. Coated Qtz.		
F	"				A/A		
F	"			Tr.	A/A		
F	"		?		A/A		
F	"			Tr.	A/A		
M	Mancoes			Tr.	A/A		
M	"		?		A/A		
M	clean Sand			Tr. limonite for, mod. ? thin			
M	Mancoes	Chalk coal?			Gry. Wht. Red. Speckled Shallow, Qtz. A/A plus clear		
M	Mancoes, Pale Red Sh.				Qtz. A/A, grey or feld.		
F	"	?	coal		Frosted Qtz. & "		
F	clean Sand, Wht. Sh. & Cam.				Frosted Wht. coated Qtz., Gry. Or. Feld.		
F-M	Some Mancoes & Gry. Sh.				A/A		
F-M	"				A/A		
F	clean Sand		?	Tr.	Pale Green Frosting, Gry. Or. Feld.		
F	A/A		?		A/A		
F	A/A			<Tr.	A/A		
F	A/A				A/A		
F-C	Some Mancoes & Green.			Tr.	Frosted Qtz., Gry. Or. Feld.		
F-C	Abund. Mancoes, Red & Wht. Sh.				A/A plus clear Qtz.		
M	clean Sand			Tr. limonite	Frosted Qtz., Gry. Or. Red Or. Feld.		
M	"				A/A		
F-M	Mancoes & Green & Red Sh.				A/A		
F-M	"	coal?	?	Tr.	A/A		
F-M	Abund. Mancoes, Mod. Red Sh.				A/A		
F-M	"				A/A		
M	clean Sand				A/A		
M	"				A/A		
M	"				A/A		
F-M	Some Mancoes				A/A		

CVX 00917

HOLE NUMBER:

I.C. 13

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: I.C. 14

DATE COMPLETED: 10-10-75

PROBE DEPTH: 2810

COLLAR ELEV: 6580

DRILLER & RIG NO: C. Jones # 11

LOGGED BY: R.M.

TOTAL DEPTH: 2840

PROBED BY: G. Cordes

CORE REC'D: —

NOTES:

ELECTRIC LOG					DESCRIPTION		MICROSCOPIC			DESCRIPTION
From	To	Fm.	Rock	Color	Gr. Sz.	Remarks	Corb.	Alter.	Fe S2	Remarks
					VF-F	2270-80 Lt gray overall		Tu. Hm	✓	Qtz. Sand, Tu. Feld
					"	"		"	✓	"
					F-M	Lt gray brn overall		Limon		Milky Qtz, Clk. Qtz., Gray Or. Feld., Blk. guss.
					"	2300-10		Limon	✓	A/A
					"	"		Limon		A/A
					"	"		"		A/A
					"	"		"	✓	A/A
					F	"		"		A/A
					"	2350-60		"		A/A
					"	"		"		A/A
					"	"		"		A/A
					"	"		"		A/A
					VF-F	Lt Gray Overall		Tu. Hm		Distinctive bright red guss, Milky Qtz, Gray Or. Feld.,
					VF-M	"		"		A/A
					VF-F	2400-10		"		A/A
					"	"		"		A/A
					"	"		"		A/A
					"	"		Limon		A/A
					"	"		"		A/A
					"	2450-60		"		A/A
					"	"		"	✓	A/A
					M	Well sorted Lt Gray Brn Overall		Limon	✓	Some bright red guss, Milky Qtz, Gray Or. Feld.,
					F-M	"		Limon		A/A, cl. Qtz.
					VF-F	Lt Gray overall		Tu. Hm		Clear! Milky Qtz, Gray Or. Feld.,
					F-M	2500-10 Lt Gray Brn Overall		Limon		Frontal. Whit. Cracks. Clk. Qtz, Gray. Yel. Feld., Yel. Whit. Guss.
					"	"		"		A/A
					M-C	"		"	✓	A/A (Mussel, open space fil. Calcite, purple sl.)
					"	"		rock?	"	A/A
					F-M	"		"		A/A
					M-C	2550-60		✓	"	A/A
					"	"		✓	"	A/A
					F-C	"		"		A/A
					F-M	"		✓	"	A/A
					"	"		"		A/A Abun. Steel Shavings
					"	2600-10 Monocase		"	✓	A/A
					F-C	"		"	✓	A/A
					F-M	"		"	✓	A/A
					"	"		✓	"	A/A
					"	"		Tu. Hm	✓	A/A
					"	"		Tu. Hm		A/A
					"	2650-60		✓	"	A/A
					"	"		✓	"	A/A
					F	"		"		A/A
					F-M	Monocase		✓	"	A/A
					F	" Lt gray Lt Brn overall		✓	"	A/A
					F	2700-10		✓	"	A/A
					F-M	"		"	✓	A/A
					F-M	"		✓	"	A/A
					F-M	"		✓	"	A/A
					F-M	"		✓	"	A/A
					F-M	2750-60		✓	"	A/A
					F-M	"		"		A/A
					F-M	"		"		A/A (distinctive bright red guss, sl.)
					F-M	"		"		A/A
					M-C	"		"		A/A
					M-C	2800-10		✓	"	A/A
					M-C	"		"		A/A
					M-C	"		"		A/A
					F-M	"		"		A/A

CVX 00918

HOLE NUMBER:

I.C. 14

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: I.C. 15      DATE COMPLETED: 10-17-75      PROBE DEPTH: 3070  
 COLLAR ELEV: 6550      DRILLER & RIG NO: C. Jones # 11      LOGGED BY: R.M.  
 TOTAL DEPTH: 3100      PROBED BY: G. Cordes      CORE REC'D: —  
 NOTES: Green at 2450, Coal 160-180, 2780 Juw M clay Feld. ss rot'd

ELECTRIC LOG					DESCRIPTION		MICROSCOPIC			DESCRIPTION
From	To	Fm.	Rock	Color	Gr. Sz.	Remarks	Carb.	Alter.	Fe S2	Remarks
50	E				M	2550-60				Clear Quartz
					M	70 Blk Sh., Distinctive Red Green			✓	Clear Quartz, Wt. Blk Sh.
					M	80 "			✓	Feldspar, Red, Green Sh., Tr. Kaol coated Qtz
					M	90 Tr. Blk Sh.			✓	A/A
					M	2600 "	✓		✓	Clear Sand, Kaol. Coated Qtz, Feld., Red Sh.
					M	10 "	✓		✓	A/A
					M	20 "	✓		✓	A/A, Sub. ang. - rounded
					M-F	30 Abun. Blk Shale			✓	A/A
					"	40 "			✓	Red, Green, Wht. Shale, Sub. Res. Fractured Qtz
					"	50 "			✓	A/A
50					"	60 "			✓	A/A Tr. Coal
					"	70 "			✓	A/A
					"	80 "			✓	A/A
					"	90 "			✓	A/A
					F-M	2700 Less Blk Shale			✓	A/A
					VF-M	10 Blk Sh.			✓	Red Shale, Sub. Res. Feld. SS
					"	20 "			✓	Red, Green, Wht. Shale, Feld. SS
					"	30 "			✓	A/A
					"	40 Blk Sh.			✓	A/A
					F-M	50 "	✓		✓	Red, Green, Wht. Shale, Feld. SS, SS/wht. cement
50					"	60 "			✓	A/A
					"	70 "			✓	A/A
					"	80 Abun. Blk Sh.			✓	A/A
					"	90 "			✓	A/A Bright Red Green.
					"	2800 "			✓	A/A
					"	10 "			✓	A/A
					"	20 "			✓	A/A
					"	30 "			✓	A/A
					"	40 "			✓	A/A
					"	50 "			✓	A/A
50					"	60 "			✓	A/A
					"	70 "			✓	A/A
					"	80 Less Blk Shale			✓	A/A
					"	90 "			✓	A/A
					"	2900 Blk shale			✓	Tr. Red, Green, Wht. Shale, Sub. Res. Arkose
					"	10 Tr. Blk Shale			✓	Red, Green, Wht. Shale, Feld. SS.
					"	20 "			✓	Tr. Red, Green, Wht. Shale, Sub. Ang. Res. Arkose
					M-C	30 Very Clean distinct Blk Shale			✓	A/A, Fibrous Glite,
						40 "			✓	Tr. Red, Green, Sh., Sub. Ed. Arkose Fractured or Kaol Coat.
						50 "	✓		✓	A/A
50						60 "			✓	A/A
						70 "			✓	A/A
						80 "			✓	A/A
						90 "			✓	A/A
						3000 "			✓	A/A
					M	10 "			✓	A/A
						20 "	✓		✓	A/A
						30 "			✓	A/A
						40 "			✓	A/A
						50 "			✓	A/A
50						60 "			✓	A/A
						70 "			✓	A/A
						80 "			✓	A/A
									✓	A/A

CVX 00919

HOLE NUMBER:

I.C. 15

## DRILL HOLE LOG

HOLE NO: I.C. 16 Site D	DATE COMPLETED: 10-23-75	PROBE DEPTH: 2970
COLLAR ELEV: 6540	DRILLER & RIG NO: C. Jones #11	LOGGED BY: B.M.
TOTAL DEPTH: 2990	PROBED BY: G. Cordes	CORE REC'D: —

NOTES:

[illegible]

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: I.C. 17 Site E DATE COMPLETED: 10-31-75 PROBE DEPTH: 3130  
 COLLAR ELEV: 6620 DRILLER & RIG NO: C. Jones #11 LOGGED BY: R. M.  
 TOTAL DEPTH: 3160 PROBED BY: G. Cordes CORE REC'D: —

## NOTES:

DESCRIPTION		MICROSCOPIC			DESCRIPTION
Gr. Sz.	Remarks	Carb.	Alter.	Fe S2	Remarks
	2600				
F-M	2670 Abun. Blk. Sh.				Tr. Ark. Gr. & Whit. Sh., Sub. Rd. Qtz., Tr. Feld.
"	"				A/A
"	"				A/A
"	2700 "				A/A
M-C	"				A/A
M-F	"				A/A
"	"				A/A
"	"				A/A
"	"				A/A
"	2740 "				A/A
"	"				A/A, Red Shale
"	"				A/A, "
M-C	Blk Shale - Arkosia Sub. Rd. SS				Auh. Whit. Gr. & F. Gr., Frosted Qtz., Gray Pl. Qtz. Feld., Gr. & Rd.
"	2800 "				A/A
"	Clean Arkosia Sub. Rd. SS				Fuh. Gray & Red Gr. Feld., Frosted Qtz.,
"	"				A/A
"	Blk. Sh.				A/A, Green Shale
"	"				Auh. A/A
F-C	Abun. Blk. Sh.				Tr. Frosted Qtz., Red & Green Shale
"	2860 "				A/A
M-C	Blk Shale - Arkosia Sub. Rd. SS				Frosted Qtz., Gray Pl. Qtz., Feld., Green Sh.
"	Clean Arkosia Sub. Rd. SS				Fuh. A/A, Red Sh.
"	Blk Sh. & "				A/A, "
F-M	2900 "				Tr. A/A, Abun. Rd. Sh.
M-C	Clean Arkosia Sub. Rd. SS				Tr. A/A
M-C	"				Tr. A/A
"	"				Fuh. A/A
"	"				Auh. Fuh. A/A
"	"				Tr. A/A
"	2960 "				A/A
"	"				A/A
"	"				A/A
F-C	"				Tr. ? Tr. A/A
M-C	3000 "				A/A
"	"				Tr. A/A
"	"				Fuh. A/A
"	"				A/A
"	"				A/A
"	"				A/A
"	3060 "				A/A
"	"				A/A
"	"				Tr. A/A
"	"				A/A
F-M	3100 Blk. Sh., Arkosia Sub. Rd. SS				Red & Green Shale, Frosted Qtz. Gr., Rd. & Gray Pl. Qtz. Feld.
"	"				Tr. Limon. A/A
"	"				A/A
"	"				A/A
"	Clean Arkosia Sub. Rd. SS.				A/A
"	"				A/A
F-M	"				A/A
M-C	3160 T.D. Blk. Sh. Arkosia				

CVX 00921

HOLE NUMBER:

I.C. 17

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: IC 18 Site G DATE COMPLETED: 11-8-75 PROBE DEPTH: 2945  
 COLLAR ELEV: 6670 DRILLER & RIG NO: C. Jones # 11 LOGGED BY: R.M.  
 TOTAL DEPTH: 2960 PROBED BY: Wilson's Logging Co. D. Wilson CORE REC'D: —  
 NOTES: T.D. 2900 Jm; Pick 2340

Depth	Gr. Sz.	Description	Microscopic			Description
			Carb.	Alter.	Fe S2	
2350						
2400						
2450						
2500	M	2460 Blk. Sh., Feld. S.S.	Abund. Limestone			Gr. & Red Sh., Red Dr. Feld., Fract. & Whit. Cryst. Qtz.
	M	" "	Limestone	✓		A/A, Whit. Sh.
	F	Tr. Blk. Sh., Feld. Sub. Rd. S.S.	Abund. Limestone			Gr. Sh., Gr. Dr. Feld., Clean, Fract. & Whit. Cryst. Qtz.
	F	" "	Abund. Limestone	✓		A/A
	F	2500 " "	Abund. Limestone			A/A
	F	" "	Abund. Limestone	✓		A/A
	F-M	Blk. Sh., Arkosic Sub. Rd. S.S.	Abund. Limestone	✓		Gr. Dr. & Red Dr. Feld., Whit. Gr. Sh., Clean, Fract. & Whit. Cryst. Qtz.
	F-M	" "	Limestone	✓		A/A
	F-M	Abund. Blk. Sh., Feld. Sub. Rd. S.S.	Limestone	✓		A/A, red sh.
2550	M-C	" "	Limestone	✓		Gr. Dr. & Red Dr. Feld., Gr. & Sp. Sh., Fract. & Whit. Cryst. Qtz.
	F	Tr. Blk. Sh., Arkosic Sub. Rd. S.S.	Limestone	✓		A/A
	F-M	" "	Abund. Limestone			A/A, Whit. Sh.
	F-M	" "	Limestone	✓		A/A
	F-M	" "	Limestone	✓		A/A
2600	F-M	2600 " Feld. Sub. Rd. S.S.	Limestone			A/A
	F-M	" "	Limestone	✓		A/A
	F-C	Abund. Blk. Sh., "	Tr. Limestone	✓		A/A, red & whit. sh.
	F-C	" "	Tr. Limestone			A/A, red & whit. sh.
	F-C	" "		✓		A/A
2650	C	Clean Feld. Sub. Rd. S.S.	Tr. Limestone	✓		Gr. Dr. Feld., Gr. Sh., Fract. & Whit. Cryst. Qtz., Fract. & Whit. Cryst. Qtz.?
	M	Tr. Blk. Sh., Feld. Sub. Rd. S.S.				A/A
	M	" "		✓		A/A
	F-M	" "		✓		A/A
	F-M	" "	Tr. Limestone	✓		A/A
2700	M-C	2700 " "		✓		A/A
	F-M	Abund. Blk. Sh., "	Tr. Limestone	✓		A/A
	F-M	" "	Tr. Limestone			A/A, red shale
	F-M	Tr. Blk. Sh., "	Limestone			A/A
	M	Clean Arkosic Sub. Rd. S.S.	Tr. Limestone	✓		A/A
	C	" "				A/A, Gr. Fract. & Whit. Cryst. Qtz.
2750	M-C	" "				A/A
	M-C	" "		✓		A/A
	M	" "				A/A
	F	" "				A/A
	F	2800 " "				A/A
2800	F	" "	Tr. Limestone			A/A
	F	" "				A/A
	F	" "				A/A
	F	" "	?	✓		A/A
	M	" "				A/A
2850	M	" "				A/A
	M	" "	Tr. Limestone	✓		A/A
	M	" "				A/A
	M	" "	Limestone	✓		A/A
	F	2900 " "	Heavy Limestone			A/A
	F	" "	Limestone			A/A
2900	M	" "	Heavy Limestone	✓		A/A
	F-C	Blk. Sh., Arkosic Sub. Rd. S.S.	Limestone	✓		Gr. Dr. Feld., Red Whit. Sh., Fract. & Whit. Cryst. Qtz.
	F-C	Abund. Blk. Sh., "	Limestone			A/A
	F-C	2950 " "	Limestone	✓		A/A

CVX 00922

HOLE NUMBER:

A/A

T.D. 2945

T. 10



# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: I.C. 19 Sir H DATE COMPLETED: 11-12-75 PROBE DEPTH: 2225  
 COLLAR ELEV: 6240 DRILLER & RIG NO: C. Jones #11 LOGGED BY: R.M.  
 TOTAL DEPTH: 2260 PROBED BY: G. Cordes CORE REC'D: -  
 NOTES: Artesian Water at 410'

DESCRIPTION		MICROSCOPIC			DESCRIPTION
Gr. Sz.	Remarks	Carb.	Alter.	Fe S2	Remarks
F-M	1770 Clean Sub. Rd. Quartz S.S.	Tr. Limon.	✓	✓	Frost. Qtz, Cont'd Qtz, Grn. Sls, Tr. Feld.
F-M	"		✓		A/A
F-M	"	Tr. Limon.			A/A
F-M	1800 "		✓		A/A
M	"	Tr. Limon.	✓		A/A
F-M	"		✓		A/A
M	"		✓		A/A
F-M	"	Tr. Limon.	✓		A/A
M	"				A/A
M	"	Tr. Limon.	✓		A/A more Feld.
M	"	Tr. Limon.	✓		A/A "
M	"	Tr. Limon.	✓		A/A "
F-M	"	Tr. Limon.	✓		A/A " less Whit. Coating
F-M	1900 "	Tr. Limon.	✓		A/A " "
F-M	Tr. Blk Sls, Sub. Rd. Feld. S.S.		✓		A/A
F-M	"		✓		A/A
F-M	"	Tr. Limon.	✓		A/A
F-M	"				A/A
T-M	"	Tr. Limon.			A/A
M	"				A/A, red sls.
	Abun. Blk. Sls		✓		Frost. Qtz, Whit. Sls, Tr. Feld
	"				A/A
F-M	Blk Sls, Sub. Rd. Feld. S.S.				Frost. Qtz, Cont'd Qtz, Grn. Sls, Gyr. Rd. Feld.
F	2000 "				A/A
VF-F	"	Tr. Limon.			A/A
M-C	"				A/A, red sls, buff. S.
M	Clear Feld. Sp. in Sub. Rd. S.S.				A/A
M	"				A/A
M	"				A/A
M	"				A/A
F-M	"		✓		A/A
M	"				A/A
F-M	"				A/A
M	2100 "				A/A
M-C	"				A/A, Grn. Frost. Qtz,
M-C	"				A/A, "
M-C	"				A/A, "
F-M	"		✓		A/A, "
F-M	"		✓		A/A, "
M	"	?			A/A, "
M-C	"				A/A, "
M	"	Tr. Limon.	✓		A/A, "
M	2200 "		✓		A/A, "
F	"		✓		A/A, "
M	"				A/A, "
M	"		✓		A/A, " red sls,
M	Tr. Blk Sls, "				A/A, " "
M	"		✓		A/A, " red sls

CVX 00923

HOLE NUMBER:

Page 10

54 ft I.D. Casing

PIONEER NUCLEAR, INC.

DRILL HOLE LOG

HOLE NO: 20 Site: N DATE COMPLETED: 11-17-75 PROBE DEPTH: 1930  
COLLAR ELEV: 5980 DRILLER & RIG NO: C. Jones #11 LOGGED BY: R.M.  
TOTAL DEPTH: 1980 PROBED BY: G. Cordes CORE REC'D: —  
NOTES: Samples destroyed by trucks.

ELECTRIC LOG		DESCRIPTION		MICROSCOPIC			DESCRIPTION
		Gr. Sz.	Remarks	Corb.	Alter.	Fe S2	Remarks
300	300 CPS						
400							
500							
600							
700							
800							
900							
1000							
1100							
1200							
1300							
1400							
1500							
1600							
1700							
1800							
1900							
1930							
1980							

M	Clean Quartz. Sub. Rd. SS		✓	Frosted & Wlt. Coated Qtz, Gr. Shl, Tr. Gr. Dr. Feld,
F-M	"		✓	A/A
F-M	"		✓	A/A
F-M	"			A/A
F-M	"	?	✓	A/A
M	"		Feld	A/A
F-M	"		✓	A/A
F-M	"		✓	A/A
M	"		Qtz. Lined	A/A, Wlt & Red Speckled Shale,
M	"		✓	A/A
F-M	"		✓	A/A
M	"	?	✓	A/A
M	"		Qtz. Lined	A/A
M	"		✓	A/A
M-C	"		Tr. Lined	A/A
M-C	"		Tr. Lined	A/A
M	"		Tr. Lined	✓ A/A
M-C	"			A/A
M-C	"		✓	A/A
M-C	"		Qtz. Lined	✓ A/A
M	"		Abund. Euh.	A/A
M	"		✓	A/A
F	"			A/A, Yellowish Cement, Calcite
F-M	"		Tr. Lined	✓ A/A
C	"		✓	A/A
C	"			A/A
M	Clean Feldspathic Sub. Rd. SS.		Qtz. Hdr	A/A
M	"			A/A
C	"			A/A
C	"		✓	A/A, Clear Qtz, Wlt Shl
M	Clean Quartz. Sub. Rd. SS.		✓	A/A
C	"			A/A
M	"			A/A
M	"			A/A
F-M	"		✓	A/A
F-M	"		✓	A/A
M-C	"		✓	A/A
M-C	"		✓	A/A
M-C	"		✓	A/A
M-C	"		✓	A/A
M	"		✓	A/A
C	Clean Feldspathic Sub. Rd. SS.		✓	A/A
M	"		✓	A/A
M-C	"		✓	A/A
M-C	"		Tr. Lined	✓ A/A
M-C	"			

CVX 00924

HOLE NUMBER: A/A, Red Shale



# DRILL HOLE LOG

HOLE NO: I.C. 22 Site J DATE COMPLETED: 12-5-75

PROBE DEPTH: 2060

COLLAR ELEV: 6260

DRILLER & RIG NO: C.J. # 1)

LOGGED BY: EVS

TOTAL DEPTH: 2080

PROBED BY: PNI - Carlos

CORE REC'D:

NOTES: No Cuttings from 400'-700' (300' missing due to lost circulation in Kg.); No cuttings from 1760-2080

ELECTRIC LOG					FIELD DESCRIPTION		MICROSCOPIC DESCRIPTION			DESCRIPTION
From	To	Fm.	Rock	Color	Gr. Sz.	Remarks	Carb.	Aller.	Fe S2	Remarks
					F	Tr. green shale; Blk. shale; Qty.				
						Incr. quartz; Tr. orange feldspar				
						Abundant dk green shale; A/A				
						Mostly shale; kaolinite; Tr. quartz				
						Abundant green shale; Qty. feldspar; trace A/A				
					VF-M	Incr. subarkose ss at 65'; Pyrit. Abund.			✓	Abund. Blk. Sh., Frosted Clear Qtz, Grry. Or. Feld,
					"	Mostly, massive slough; white clay (hard)			✓	A/A
					F-M	Quartzose ss; Tr. orange feldspar; Abundant; fair	?		✓	Clear ss, Frosted & white Coated Qtz, Red Or. Feld,
					"	A/A Tr. limonite	?		✓	A/A
					VF-F	Quartzose-subarkose ss. Tr. limonite				Abund. Blk. Sh., Wht. & Grr. Sh., Frosted Clear Qtz,
					"	Abundant kaolinite; A/A Tr. lim	Ham.	✓	✓	A/A
					"	Tr. limonite A/A - Mostly, & abundant		✓	✓	A/A
					"	A/A				A/A
					"	Tr. and limonite	Tr. Ham			A/A, red speckled shale
					"	Incr. Blk. shale slough; A/A				A/A
					"		Tr. Ham			A/A
					"	Tr. limonite stain on one grain	?	Tr. Ham		A/A
					IF-C	Mud shale slough		Tr. ?	✓	A/A, red speckled sh.
					VF-M	A/A shale	?		✓	A/A
					"	Fm. limonite; Fm. pyrite - staining				A/A
					F-M	A few coarse qty. + feldspar grains			Abund.	A/A, red speckled sh., Abund. drill steel,
					VF-M	Incr. green shale				A/A, Abund. Wht. Sh.
					VF-F	Quartzose ss; Tr. limonite; wh. clay				A/A, "
					VF-M	A/A	?		✓	Blk. Sh., Frosted Clear Quartz, Yellow Coated F. Sand,
					VF-F	A/A				A/A
					F	No cuttings from here to TD	?	Tr. Limon.	✓	Sub. Blk. Quartzose ss, Grr. Sh., Tr. Feld,
					F	drill steel shavings		Tr. Limon.	✓	A/A
					M	"		Limono	✓	A/A
					M					A/A
					M		?			A/A, red speckled sh.,
					M				✓	A/A
					M	drill steel shavings		Tr. Limon.	✓	A/A
					F-M	"	?		✓	A/A
					F-M		?	Tr. Limon.	✓	A/A
					M		?	Tr. Limon.	✓	A/A, red speckled sh.
					F-M	drill steel shavings	?	Tr. Limon. Ham.	✓	A/A,
					F-M			Limono.	✓	A/A,
					F-M			Tr. Limon.	✓	A/A,
					F-M	drill steel shavings		Tr. Limon.	✓	A/A,
					F			Tr. Limon.	✓	A/A,
					F		✓	Tr. Limon.	✓	A/A
					F			Tr. Limon.	✓	A/A
					F			Tr. Limon.	✓	A/A
					VF-F			Tr. Limon.	✓	A/A, Wht. Coated VF sandstone
					VF-F	drill steel shavings		Tr. Limon.	✓	A/A, Calcite
					VF-F	"		Tr. Limon.	✓	A/A
					VF-F			Tr. ?		A/A, Calcite, wht. sh.,
					VF-F	drill steel shavings		Tr. ?		A/A
					F					A/A
					F	drill steel shavings		Tr. ?		A/A
					F	"				A/A
					M			Tr. Limon.?	✓	A/A
					M			Limono Ham.?	✓	A/A
					M					A/A, wht. sh.,
					M					A/A

**CVX 00926**

HOLE NUMBER:

T.C. 22

# PIONEER NUCLEAR, INC.

# DRILL HOLE LOG

HOLE NO: IC-23 Site DATE COMPLETED: 12/9/75

PROBE DEPTH: 2085

COLLAR ELEV: 6220 DRILLER & RIG NO: C.J. # 11

LOGGED BY: FVS

TOTAL DEPTH: 2100 PROBED BY: PNI - Cordes

CORE REC'D: —

NOTES: 2200' of samples laid out ; Drillers pick green at 1560'

Gr. Sz.	FIELD DESCRIPTION	MICROSCOPIC			DESCRIPTION
		Corb.	Alter.	Fe S2	
	Manassas Slough				
IF-C	Qz ss, Tr. feldspar, Mud. hard				
	A/A Tr. limonite; Tr. am. pyrr. sil. tan				
	A/A				
	Tr. limonite; Abundant karlinite				
	F-M limonite A/A				
	A/A Tr. limonite				
	Quartzose ss, subarkose ss; A/A				
M	Manassas Slough,			✓	Quartzose Sub. Rd. S.S., Frosted Wt. Coated, Grgy. Or. Feld
M				✓	A/A (probably Jmij)
Shale	Manassas + Tr. green shale				Abund. Blk. Shy, Red, Grgy. Wt. Shy, Clay. Frosted Qtz, red
"	Tr. feldspar + shale				and wlt. speckled limy Shy, Wlt. Cr. VF. S.S.S.,
"	Abundant orange feldspar - steel? green sh				A/A
"	Tr. red shale			✓	A/A
"	A/A				A/A
"	A/A				A/A
"	slight ince. ss at 90-95'			✓	A/A
"	A/A			✓	A/A
M	Subarkose ss, Abund. hard				Clean Quartzose Sub. Rd. S.S., Frosted Qtz, Grgy. Or. Feld, Grgy. S.
	Tr. humate?			✓	A/A
	A/A Tr. limonite				No Sample
M	F-M Tr. limonite shale - Manassas Slough	Tr. limonite	✓		A/A, more blk. Shy.
		Tr. limonite			Blk. Shy, Red, Grgy. Wt. Shy, Wlt. Brn. Shy, Red. Or. Feld,
					No Sample
M					Quartzose Sub. Rd. S.S., Frosted Qtz, Red. Or. Feld, Blk. Red. Grgy. S.
F-M	Tr. limonite			✓	A/A, Yellow Cr. Slt., Calcite
F-M		Tr. limonite			A/A, " "
F-M				✓	A/A
F-M	Manassas Slough			✓	A/A, Abund. Blk. Shy
F-M				✓	A/A, " "
F-M	Subarkose ss; clayey; hard. Tr. M			✓	Clean Quartzose Sub. Rd. S.S., Tr. Grgy. Or. Feld, Grgy. Shy
	A/A				No Sample
M	Tr. limonite	Tr. limonite	✓		A/A
M		Tr. limonite	Ends		A/A
M			✓		A/A, Wlt. Shy.
M	Abund. pyrr. sil. tan - clayey		✓		A/A
M					A/A
M	Quartzose ss - Tr. feldspar; Tr. limonite				A/A
M					A/A, bristite
M	A/A karlinite - moderate			✓	A/A, Wlt. & red sh
F-M				✓	A/A, Wlt. Cl.
F-M			Ends		A/A, Wlt. Shy
F-M	Tr. subbedal pyrr. sil. tan		✓		A/A
M			✓		A/A
M	Tr. red shale; Unbedded ss - subarkose		✓		A/A
C		Tr. limonite	Ends		A/A
F-M	Tr. subbedal pyrr. sil. tan - Shy, at 95'; A/A				Blk. Shy, red Grgy. speckled Shy, Frosted Clay Qtz, Tr. Feld
F	Fine grain sandstone; karl. mud		✓		A/A, Calcite
F-M	A/A				A/A
F-M	A/A			✓	A/A
F-M	Tr. subbedal pyrr. sil. tan	Tr. limonite	✓		A/A
F-M			✓		A/A
F-M		Tr. limonite	Ends		A/A, Calcite
F-M	T-M limonite - green tan - blk	Tr. limonite	✓		A/A
F-M	T-M limonite - Well sorted ss		✓		A/A
F-M	" "		✓		A/A, more red sh
M	" "		Ends		A/A, Feldspathic S.S.,
F-M	" "		✓		A/A, red sh,

CVX 00927

HOLE NUMBER:

IC 23

Site L  
PIONEER NUCLEAR, INC.

DRILL HOLE LOG

HOLE NO: IC-24 Site L

DATE COMPLETED: 12/12/75

PROBE DEPTH: 1626

COLLAR ELEV: 5870

DRILLER & RIG NO: C.J. # 11

LOGGED BY: EVS

TOTAL DEPTH: 1640

PROBED BY: PNI-Corden

CORE REC'D: —

NOTES:

Gr./Sz.	FIELD DESCRIPTION	MICROSCOPIC			DESCRIPTION
		Carb.	Aller.	Fe S2	
	Remarks				Remarks
F-M	Quartzose SS; Tr. orange feldspar ALA; kaolinite T-M; sl. efferv Tr. green shale at 1095'				
	Quartzose SS - fresh; Tr. pyr - shiny Tr. limonite; hematite at 25'				
	F-M. Euhedral - subhedral pyr - shiny				
M	Tr. hematite; Pyrite - A/A			✓	Sub. Rd. Quartzose S.S., Frosted & w/ Cont. Qtz, Tr. Fe
M					A/A
M	Tr. hematite / limonite				A/A
M	At 1175 Tr. pyr - shiny				A/A
M	Intermed. Bed. & green shale	Tr. limonite			A/A
F-M	Tr. hematite; Tr. euhedral pyr - shiny	limonite?		✓	A/A
M	Inter kaolinite; Tr. hematite	Tr. limonite			A/A
M	Tr. pyr - A/A at 1235				A/A
M					A/A
M	slight incr. sh / carb. at 1240'	Tr. limonite			A/A, w/lt carb. - shale
M		Tr. limonite			Sub. Rd. Feldspathic S.S., Frosted & w/lt Qtz, Redd. Fe, Gr.
M	Tr. euhedral pyr - slight limonite				A/A
M	Inter. Bk. & green sh. at 65'; Tr. lim			✓	A/A, red speckled sh.
M	kaolinite - Moderate; Tr. feldspar	Tr. limonite?		✓	A/A, Drill Steel Showings
M				✓	A/A
M		Tr. limonite?		✓	A/A
M				✓	A/A
M		Tr. limonite			A/A
C	Tr. hematite; Subarkose ss			sub	A/A less w/lt coating, red sh.
C					A/A
M				✓ sub	A/A
M	Inter. feldspar content; Tr. hem.	Tr. limonite			A/A, w/lt sh.
M	F-M subhedral pyrite - shiny; Moderate				A/A
F-M					A/A
M		limonite		Euh	A/A
M		Tr. limonite		Euh	A/A
M					A/A, red sh.
M	Subarkose ss; kaol. - Moderate	Tr. limonite		✓	A/A
M					A/A
M					A/A
M					A/A
M				✓	A/A
M				✓	A/A
M					A/A
M	Tr. subhedral pyrite - shiny			✓	A/A, red sh.
F-M		Tr. limonite			A/A
F-M	T-M pyrite - A/A	Tr. limonite			A/A
M		Tr. limonite		✓	A/A
M	Tr. hematite at 1545'	Tr. limonite		✓	A/A
M	Tr. hematite	Tr. limonite?		✓	A/A, red sh.
M		Tr. limonite			A/A
M-C		limonite		✓	A/A, red sh.
M	Tr. hematite; finer grain	limonite		✓	A/A, 11
M	clean Subarkose ss	limonite		✓	A/A, Yellow - Cont. Fe Silt
M		limonite			A/A
M					A/A
M	No sample from 1625 -				A/A
M					A/A

CVX 00928

HOLE NUMBER:

I.C. 24

# DRILL HOLE LOG

HOLE NO: I.C. 25 Site F	DATE COMPLETED: 12-18-75	PROBE DEPTH: 3040
COLLAR ELEV: 6740	DRILLER & RIG NO: C. Jones # 11	LOGGED BY: R.M.
TOTAL DEPTH: 3060	PROBED BY: Gr. Cordes	CORE REC'D: -
NOTES: No room to lay out samples in the field.		

ELECTRIC LOG	DESCRIPTION		MICROSCOPIC			DESCRIPTION
	Gr. Sz.	Remarks	Carb.	Alter.	Fe S2	Remarks
		Above Blk Sh.				Gr. Red Wht. Sh.; Tr. Feld; Wt. G. Silt; Fr. Q. Oz.
		"			✓	A/A, Buff. L.S.
		"			✓	A/A
		"			✓	A/A
	VF-M	Quartzose Sub. R. SS.			✓	A/A, red. Feld.
	VF-M	"		L. Mud	✓	A/A
		"				A/A, red speckled sh.
		"				A/A
		"				A/A
	F	Quartzose Sub. Aug. S.S.				A/A, O. Feld.
	VF-F	"	✓		✓	A/A, " , Coaly mat.
	VF-F	"				A/A, "
	VF-F	"	✓		Fuh	A/A, " , Coaly mat.
	VF-F	"			Fuh	A/A
	VF-F	"		Tr. Hem.		A/A
	F-M	"			✓	A/A
	VF-F	"		Tr. Hem.	✓	A/A
	VF-F	"			Fuh	A/A
	F-M	Feldspathic Sub. R. SS.			Fuh	A/A
	F-M	"			✓	A/A
	F-M	"			✓	A/A
	F-M	"		Tr. Hem.	✓	A/A
	F-M	"			✓	A/A
	F-M	"	?		✓	A/A
	F-M	"			✓	A/A
	F-M	"		Tr. Hem.	✓	A/A
	F-M	"		Tr. Hem.?	✓	A/A
	F-M	"			Fuh	A/A
	F-M	"			✓	A/A
	F-M	"		Tr. Hem.?	✓	A/A
	M-C	"				A/A
	M	Blk. Sh.			✓	A/A
	M	"			✓	A/A
	M	"			✓	A/A
	M	"			✓	A/A
	M	"			✓	A/A
	M	"			✓	A/A
	M-C	"		Tr. Hem.	✓	A/A
	F-M	"				A/A
	M	"				A/A
	M	"			✓	A/A
	M	"				A/A
	M-C	Tr. Blk Sh.				A/A, Green Frosting
	M-C	"			✓	A/A
	M	"			Fuh	A/A
	M	"			Fuh	A/A
	M	"				A/A
	M-C	"			✓	A/A
	M	"				A/A
	M	"	✓?			A/A
	M	"				A/A
	M	"				A/A

CVX 00929

HOLE NUMBER:

**CVX 00929**

T.C. 25

**PARTIALLY SCANNED  
OVERSIZE ITEM(S)**

See document # **2167983**  
for partially scanned image(s).

**CVX 00930**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000



Disc w/ CFB

R. P. Blanc

5431.273

Salt Lake City, Utah  
January 20, 1975

① FYE

MINERALS DEPARTMENT	
JAN 29 '75	
R. P. BLANC	<i>[initials]</i>
C. J. KUNDERT	
S. MUESSIG	<i>[initials]</i>
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: CECIL H. SMITH

FROM: WILLIAM M. PENNELL

SUBJ: IGNACIO CHAVEZ JOINT VENTURE MEETING WITH TEXAS EASTERN NUCLEAR AND  
PIONEER NUCLEAR, IN ALBUQUERQUE, DECEMBER 11, 1974.

The following is a summary of what was discussed at the above captioned meeting:

*9/30/75?*  
*Is claim cost to COC?*

1. Pioneer was concerned about lack of agreements. Getty Oil promised signed Ignacio Chavez by January 1, 1975 and an Elda agreement as soon as possible. All new acquisitions will fall under one, or the other, agreement.
2. Pioneer proposed one hole on Mt. Taylor claims which would be jointly drilled by the Pioneer-Texas Eastern-Getty venture and by Sohio, the owner of intervening sections of the Mt. Taylor checkerboard. Cost to PN-TEN-GOC will be \$32,000, plus \$3,000 claim maintenance. Hole will be developed into a water well for Sohio. Hole to be drilled after April. A possible driller is L. C. Jones, who will probably drill the Elda hole (below) and Conoco's Mt. Taylor drilling.
3. Pioneer will drill another hole on south portion of Elda claims for \$61,000. The cost of the 1974 hole was \$80,000. Possible log trades for Mt. Taylor drilling date with Conoco, Kerradamex and Gulf will give additional information for evaluation of Mt. Taylor area.
4. Expenditures of the Mt. Taylor claims and the Elda claims will be applied to the recently acquired Coupey claims. Possibly one hole will be drilled on these claims if money permits.
5. Pioneer summarized the previous drilling <sup>where</sup> as encountering 175-250 feet of gray, pyritiferous, medium grained Westwater Sandstone; a Jackpile Sandstone channel system, ten to seventy feet thick, composed of fine grained, kaolinite, light gray-white sand; and one mineralized intercept in a Brushy Basin sandstone - 1-1/2 feet of .01% eU<sub>308</sub>.
6. Pioneer proposed thirteen holes for 1975 at a total cost of \$175,000 including a \$12,000 lease payment. These holes will be located as follows:

CVX 00931

-2-

Six holes on east side of grant to check position and lithology of the Jackpile channel sands and the Westwater sands.

Six holes on the west side of the grant to evaluate the Westwater and Brushy Basin sands.

One hole on the north to provide data for correlation across the grant.

7. Pioneer will soon submit a written proposal, of the above program, along with their long-range plans for the Ignacio Chavez Project.

Attached is the prepared handout distributed at the meeting.

William M. Pennell

WMP:mdc  
Attachment

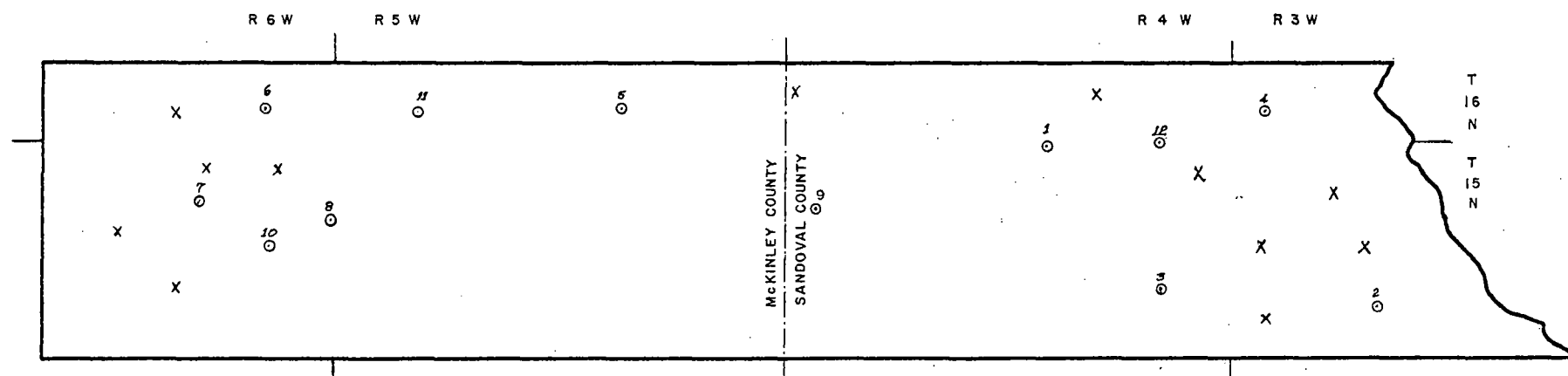
cc: Skelly Oil Company  
Pioneer Nuclear

CVX 00932

# IGNACIO CHAVEZ GRANT

— 47,259 ac. —

Getty Oil Co. (22 $\frac{2}{9}$ %), Skelly Oil Co. (11 $\frac{1}{9}$ %), Texas Eastern Nuclear Corp. (33 $\frac{1}{3}$ %),  
Pioneer Nuclear Corp. (33 $\frac{1}{3}$ %)



## LEGEND

7  
9

DRILL HOLE - 1974

X

DRILL HOLE LOCATION - 1975

## SCALE



CVX 00933

IGNACIO CHAVEZ

PHASE I SUMMARY

Phase I a, proposed 9/73  
drilled 9/73 - 6/74

	<u>Proposed</u>	<u>Actual</u>
Number of Holes	10	9
Cost	\$ 126,000.00	\$ 183,213.74
Footage	28,000'	26,422'
Cost/Foot	\$ 4.50	\$6.93
Cost/Test	\$ 12,600.00	\$ 20,357.08

Phase I b, proposed 7/74  
drilled 7/74 - 11/74

Number of Holes	4	3
Cost	\$ 38,000.00	\$ 44,977.71
Footage	9,600' (approx.)	8,675'
Cost/Foot	\$ 3.96	\$ 5.18
Cost/Test	\$ 9,500.00	\$ 14,992.57

---

TOTAL HOLES	14	12
COST	\$ 164,000.00	\$ 228,191.45
FOOTAGE	37,600'	35,097'
COST/FOOT	\$ 4.36	\$ 6.50
COST/TEST	\$ 11,714.29	\$ 19,015.95

W Pennell

CVX 00934

IGNACIO CHAVEZ JOINT VENTURE MEETING

December 11, 1974

QUESTIONS:

1. What do we believe are the necessary factors for the occurrence of an economic uranium deposit? Can we recognize them with current techniques?
  - A. Humate source from the Dakota?
  - B. Carbon trash within host?
  - C. Shale - sand interfingers?
  - D. Sandstone thicknesses in excess of 50' for the Jackpile and 125' for the Westwater (Recapture?) ?
  - E. For remobilized ore--a recognizable alteration-- is there control, possibly fault control, possibly ground water flow control?
  - F. A uranium source?
2. What should Phase I accomplish?

Possibly:

  - A. Establish a stratigraphic framework
  - B. Encounter alteration and/or mineralization
  - C. Define Phase II targets
  - D. Provide data to determine if the prospect is better or worse than when acquired
  - E. Provide data to determine how many holes will be necessary before a decision can be made to drop.
3. What have we found?
  - A. Jackpile limits and probably range of thicknesses
  - B. Westwater thicknesses similar to those in producing areas
  - C. Pyrite (?), hematite (?) -- signs of alteration
  - D. Recapture e-log character similar to Kerr-McGee's
  - E. Possible Dakota truncation of Jackpile
  - F. One small kick...do weak kicks at the base of sands have meaning?
4. What can we hope to find with further exploration, and can different procedures be of help?
  - A. Orientation of individual sandstone bodies (is this significant?)
  - B. Alteration, grain sizes, geochem. from sample analyses (would core be of help?)
5. Are we to the point of defining discrete drilling targets and if not, when will we be?

WILLIAM M. PENNELL

CVX 00935

## Getty Oil Company

P.O. BOX 54050  
LOS ANGELES, CALIFORNIA 90054

INVOICE NO. 2-1

DATE Feb. 20, 1974

*Original  
to CHS 2/27/74*Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma 74102PLEASE RETURN A COPY WITH  
YOUR REMITTANCE.

DEBIT

CREDIT

To bill you for Skelly's share of exploration charges on  
the Ignacio Chavez Lease; per attached invoice copy  
from Pioneer Nuclear.

Total: Getty-Skelly \$ 21,111.85

Skelly Share: 1/3 7,073.28

\$7,073.28

S431.273

New Mexico

Form 9-39  
Rev. Dec. 70Please examine immediately and if not correct return invoice. If your remittance is mailed to the address shown in the heading  
prompt credit will be given.

TERMS: Net Cash No Discount.

CVX 00936

543.34

823.9730230

CVX 00937

BOX NO. WIII

580

FILE FOLDER NO. 2

DOCUMENT COVER SHEET

The attached document was selected as potentially responsive to Westinghouse's Third Request for Document Production - 4th Quarter 1978.

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- ☐ Subject to Secrecy Agreement
- ☐ Privileged
- ☐ Non-Responsive

CVX 00938



90 to CHS  
8/1/74

MINERALS DEPARTMENT	
AUG 1 '74	
R. P. BLANC	
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

Salt Lake City  
July 31, 1974

TO: MR. ROBERT P. BLANC

FROM: CECIL H. SMITH

SUBJECT: CHURCH ROCK PROJECT, SAN JUAN BASIN, NEW MEXICO

Attached is a memorandum by Mr. Pennell reviewing the results of our drilling in the South  $\frac{1}{2}$  of Section 36, T17N R18W.

This drilling has effectively eliminated any ore potential in the half section tract drilled to date, but the Church Rock project consists of additional sections or partial sections located east of the Church Rock mineral area. United Nuclear has announced 42 million pounds of U<sub>3</sub>O<sub>8</sub> resources in the Church Rock Area. Kerr McGee is reported to have up to 80 million pounds of U<sub>3</sub>O<sub>8</sub> in the Church Rock Area.

Based on the reported mineralization, low holding costs and drill activity by others in the area, it is recommended that we retain our Church Rock leases pending future development in the area.

Cecil H. Smith

*Cecil H. Smith*

CHS/pb  
Attachment

cc: Mr. Glenn McKinley

CHS  
OK  
but  
should  
try to  
handle  
data w/  
Evans & D. 7-4-74

17882  
8/1/74

Agree meaning 8/8/74

CVX 00939

Salt Lake City, Utah  
July 22, 1974

MINERALS DEPARTMENT	
AUG 1 '74	
R. P. BLANC	
C. J. KUNDERT	
S. MUESSIG	
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	
J. T. WILLIAMS	
FILE	

TO: MR. CECIL H. SMITH

FROM: WILLIAM M. PENNELL

SUBJ: RESULTS OF 1973-1974 DRILLING AT  
CHURCH ROCK  
McKINLEY COUNTY, NEW MEXICO

Two of the eight state leases which form Getty Oil Company's Church Rock Project, lie to the west of the Church Rock uranium district (Plate I). These two tracts (approximately 600 acres) are the West Church Rock sub-project and lie immediately south of the Navajo Indian Reservation 10 miles north of Gallup, New Mexico.

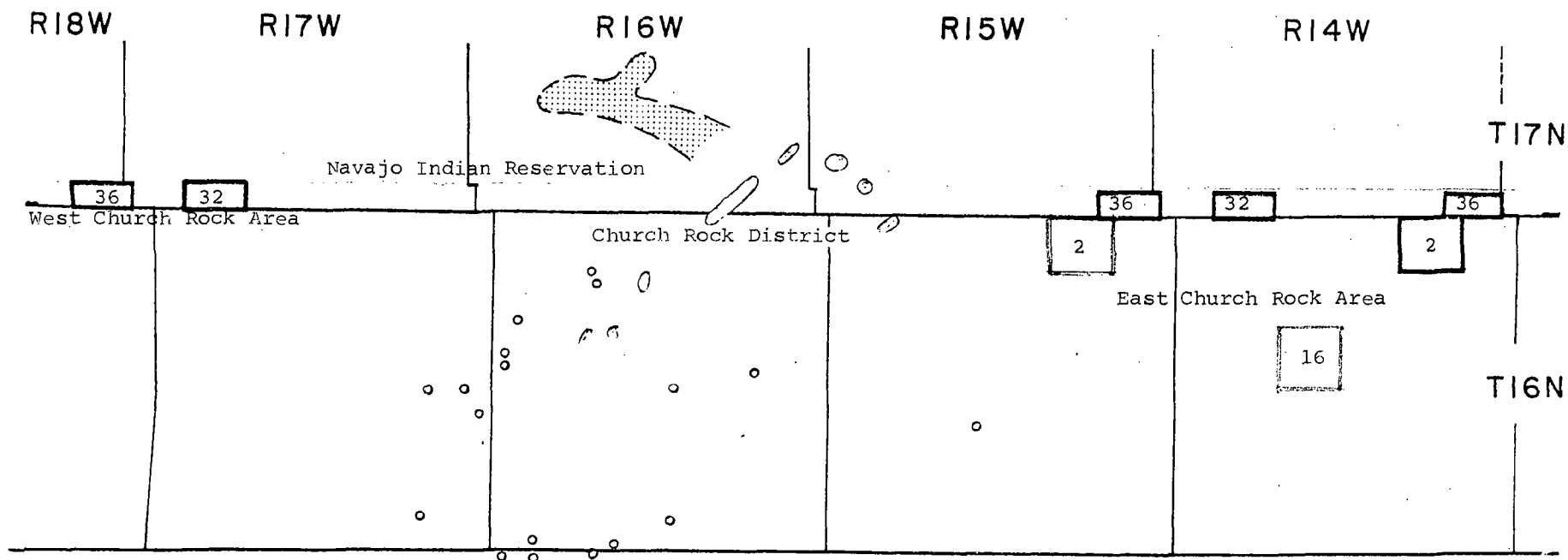
In October of 1972, Exxon Corporation requested a farm-in on the S $\frac{1}{2}$  of Sec. 36, Twp. 17 North, Rge. 18 West. Exxon had drilled up to this tract, on both their Navajo leases to the north and a Santa Fe Railroad lease to the south, with holes spaced from 500 to 1500 feet apart (Enclosure 1). The decision to test Section 36 prior to a farm-out was made in late 1972, and drilling was commenced in December, 1973. On July 9, the final hole of a three-hole program was completed for a total, in three holes of 9,080 feet.

#### DRILLING RESULTS




Four rock units are known to contain uranium mineralization in the West Church Rock area: the Dalton(?) sandstone member of the Crevass Canyon formation and the Dakota formation, both of Cretaceous age, and the Brushy Basin and Westwater Canyon members of the Jurassic Morrison formation.

The Westwater sandstones were penetrated at depths ranging from 2250 to 3150 feet. Two sandstone units, separated by a 25' (average) shale, are present. These sands are dominantly quartz, feldspar and chert (in decreasing abundance) with very minor authigenic pyrite, and range from fine to coarse-grained. The finer-grained sands are typically better sorted and are more well rounded than the coarser. The overall color of the sandstones is orange due to a hematitic coating of the sand grains. In total thickness the Westwater is approximately 200 feet and the sandstone units are greater than 50 feet. No radioactive anomalies are present in the holes drilled in this interval except for very minor "kicks" associated with thin shale partings.

CVX 00940




# ORE DEPOSITS

-  ORE BODY
-  MINERALIZATION
-  DENSE DRILLING AREA

# CHURCHROCK



 **Getty Oil Lands**  
with section numbers

The quartzose sandstones of the Brushy Basin are barren of anomalous radiation in two holes; however, hole WCR 36-2 intersected 4' of .12%  $eU_3O_8$  in a 25' zone of mineralization in the Brushy Basin at a depth of 2070 feet. The highest grade is confined to the lowermost portion of a 10-foot thick sandstone, but the mineralized zone extends into the over and underlying shales. The sandstones are typically fine grained, gray and well sorted, and the shales are green and clayey.

No anomalous radiation was encountered in the Dakota formation.

Minor gamma-ray anomalies are present in the Dalton(?) sandstone. This nonmarine, gray, medium grained sandstone is radioactive along the thin, parting shales in WCR 36-2 and WCR 36-3 (Plates II and III). Hole WCR 36-1 was spudded below this zone.

#### DISCUSSION

There is virtually no possibility that a uranium ore body is present within, or updip from, Section 36 in the sandstones of the Westwater Canyon Member. The thin, weak gamma-ray anomalies "hanging" on shales, without any mineralization in the sandstones, is typical of sandstone units through which mineralizing solutions have passed. The assumption of either lateral or down-dip movement of these solutions precludes any ore deposition within the Westwater underlying Section 36.

The hematitic coating of Westwater sand grains places Section 36 in the region invaded by post-ore, destructive oxidizing solutions which have altered the Westwater to orange-red parallel to the Morrison outcrop throughout the Grants Mineral Belt. Large uranium deposits are usually found basinward of this "barren-red" field.

The thin sands of the Brushy Basin have been tested on a density of more than 10 holes per section in the area including Section 36. Although uranium mineralization was encountered in these sands, the likelihood that a major deposit exists here and was not encountered appears unlikely. Reportedly, Exxon's drilling to the north had not intersected any better grades or thicknesses than hole WCR 36-2 and their holes to the south were barren in this interval. Mobil has drilled similar mineralization approximately four miles to the northwest on their Navajo leases (Plate IV) and feel that there remains little economic potential for Brushy mineralization of this kind at depths greater than 1000 feet.

The mineralization in the Dalton(?) Sandstone, as far as is known, has never been found with grades exceeding .01%  $eU_3O_8$ . Since most 2000-foot holes cut this interval when testing the Jurassic, enough tests have been made to preclude economic deposits of uranium in the upper Cretaceous.

Getty Oil Company  
Hole # WCR 36-2

650'

Dalton(?) Sandstone

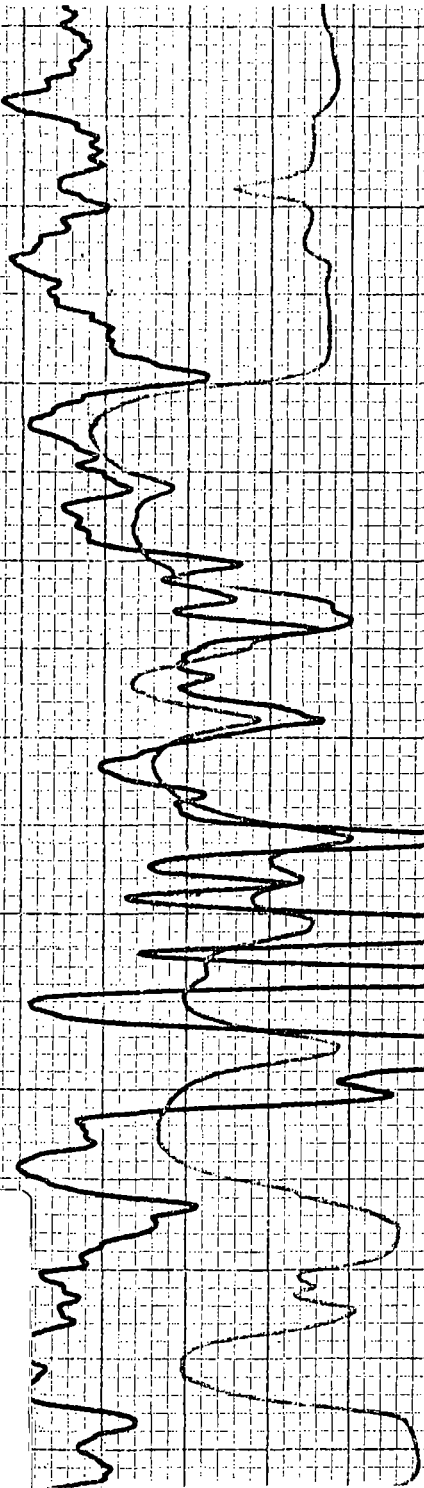
700'

PRINTED IN U.S.A.

Plate II

CVX 00943

CVX 00944

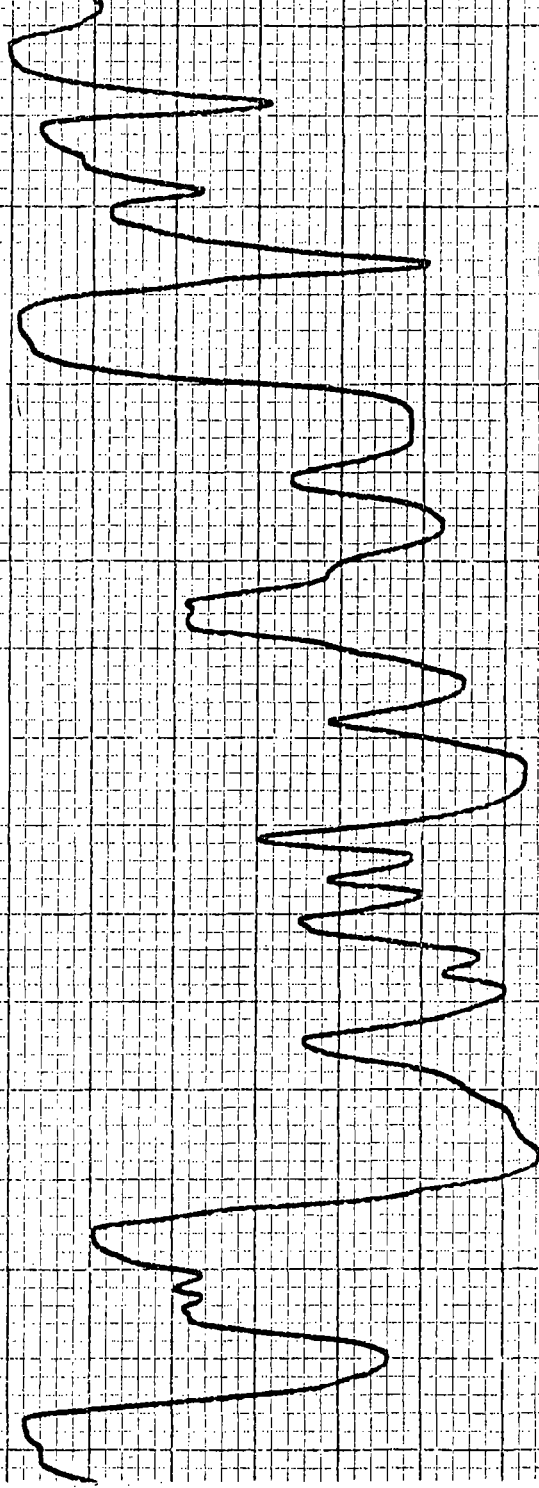


Dalton(?) Sandstone

Getty Oil Company  
Hole # WCR 36-3

1500'

1550'



Mobil Oil Company  
Drill Hole  
Sec 21. T17N., R17W

Brushy Basin Mineralization

Ream  
10 K R  
5500 Te.  
10' / min

CVX 00945

CHART 17H

AMERICAN CORPORATION, HOUSTON, TEXAS, U.S.A.

Plate IV

RECOMMENDATIONS

Little economic potential remains on Section 36 and Getty Oil Company should attempt a log trade and/or a farm-out with Exxon. Either option would provide additional data for the money expended.

The 1974 lease payment (\$.05/acre) should be made to allow sufficient time to complete these activities. If no farm-out can be made, the lease on Section 36 should be relinquished in 1975.

CVX 00946



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See document # **2167983**  
for partially scanned image(s).

**CVX 00947**

For complete hardcopy version of the oversize document  
contact the Region IX Superfund Records Center at  
(415) 536-2000

Send to *cc to CHS*  
*8/11/74*

MINERALS DEPARTMENT	
AUG 1 '74	
R. P. BLANC	<i>JS</i>
C. J. KUNDERT	
S. MUESSIG	<i>JS</i>
D. A. NICHOLS	
K. M. REIM	
L. C. ROVE	<i>JS</i>
J. T. WILLIAMS	
FILE	

Salt Lake City  
July 31, 1974

TO: MR. ROBERT P. BLANC  
FROM: CECIL H. SMITH  
SUBJECT: CHURCH ROCK PROJECT, SAN JUAN BASIN, NEW MEXICO

Attached is a memorandum by Mr. Pennell reviewing the results of our drilling in the South ½ of Section 36, T17N R18W.

This drilling has effectively eliminated any ore potential in the half section tract drilled to date, but the Church Rock project consists of additional sections or partial sections located east of the Church Rock mineral area. United Nuclear has announced 42 million pounds of U<sub>3</sub>O<sub>8</sub> resources in the Church Rock Area. Kerr McGee is reported to have up to 80 million pounds of U<sub>3</sub>O<sub>8</sub> in the Church Rock Area.

Based on the reported mineralization, low holding costs and drill activity by others in the area, it is recommended that we retain our Church Rock leases pending future development in the area.

Cecil H. Smith

*Cecil H. Smith*

CHS/pb  
Attachment

cc: Mr. Glenn McKinley

*CHS*  
*OK*  
*but*  
*should*  
*say*  
*trade*  
*data w/*  
*Exxon*

*8/11/74*  
*JS*

→ ~~McLone~~ ~~to Bob~~ ~~State~~

6/6/72

Albuquerque, New Mex.

Ken Reim -

San Juan  
S-431.34

Attached is a worksheet on the Sanostee area which was included in your May 23 memo on Decision Tree analysis.

In the Sanostee area 11% of the land lies between 2250 and 4000 feet. I have used a 20% ~~possibility~~ probability of discovery instead of the 40% you used to reflect the proportions lying at your mid-pt, high  $1\frac{1}{2}$ , average depth.

The result is still negative! (in fact it remains negative using 11%!) Oh, well.

Ken Reim

6/8/72

To Bill Pennell

If you can develop an explanation approach which will permit the discovery of or abandonment of the property for less than \$600,000, this case could have zero or plus value.

In using this approach of risk analysis, one has to be as realistic as possible in determining explanation costs. However, it clearly points out that the lower the explanation cost, the lower the risk.

Ken Reim

CVX 00949

# EXPLORATION PROSPECT ANALYSIS:

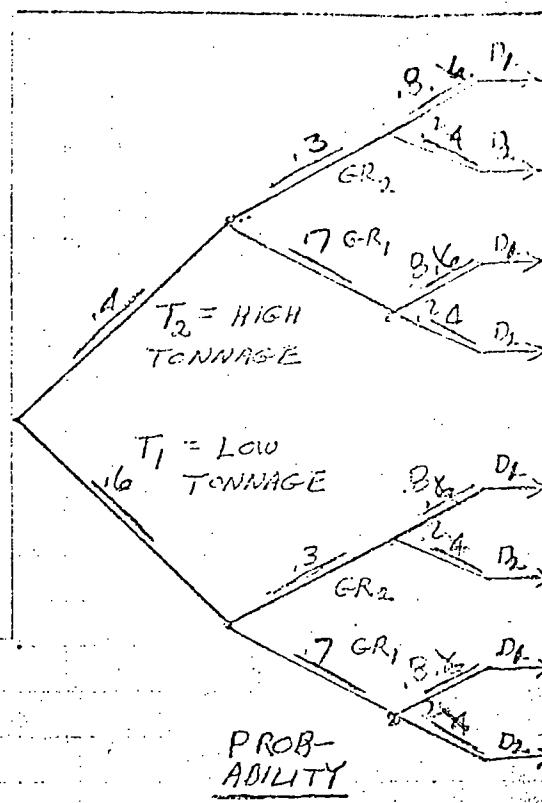
PROSPECT: Somerset, New Mexico

BY: C. Smith

DATE: May 11, 1972

ORE ESTIMATES	T	GR	D
	ORE	ORE	DEPTH
	TONNES	GRADE	FT.
RANGE, Low	1.0	.15	500
High	15.0	.35	1000
MID-POINT	8.0	.25	2250
MID-PT., Low 1/2 ①	4.5	.20	1375
High 1/2 ②	11.5	.30	3125
PROBABILITY, Low 1/2	.6	.7	.68
High 1/2	.4	.3	.32
② 9.00/25.00			

## DECISION TREE



ADD. PROB. ADJ.	ORE TONNES	ORE GRADE	DEPTH FT.	PROB. ADJ. WORTH	ORE VALUE	VEN. VALUE
P				PW	1.5 PW	
.072	11.5	.30	1375	.90	1.2	
.048	11.5	.30	3125	.44	2.4	
.168	11.5	.20	1375	-.2		
.112	11.5	.20	3125			
.108	4.5	.30	1375	.20	2.16	
.072	4.5	.30	3125	.1	0.72	
.252	4.5	.20	1375			
.168	4.5	.20	3125			

ORE .02

NO GRE  
(EXPL. = \$ .600 mil) 0.01

10.74 .215  
12.60 .252  
-.215  
-.068  
-.021

CVX 00950

6/10/72

Salt Lake City, Utah  
January 10, 1972

TO: MR. KENNETH M. REIM  
FROM: CECIL H. SMITH  
SUBJ: NAVAJO SALE NO. 6 AND NO. 7  
NEW MEXICO

5431.34  
San Juan Co.

Minerals Exploration Department	
JAN 12 '72	
R. P. Blanc	
G. F. Davidson	
G. B. Griswold	
C. J. Kundert	
S. Mnessig	
K. M. Reim	<i>MR</i>
L. C. Rove	
File	

San Juan

During our visit to Albuquerque last week, Bob, John and myself discussed these two upcoming sales with Bill Pennell. We are of the opinion that the No. 6 sale of allotted Navajo lands, scheduled for February, is not of primary interest to Getty Oil Company. We are presently working up a proposal recommending bidding at the Navajo Sale No. 7 in April or May.

During this week I will be discussing this sale with John Mohar in detail. We hope to be able to advise you and the Legal Department early in February regarding this sale.

*Jack -  
please note*

*CHS*

CHS:alr

cc: Messrs. Robert P. Blanc  
John Mohar  
William M. Pennell

*cc: Jack Sample 1/14/72*

CVX 00951

*File*  
*Ken - We do not plan to bid*  
*on Sale No 6 - I've so*  
*advised Sample. We do*  
*plan to bid on 7 & I've*  
Los Angeles, California

December 30, 1971

*colored for*  
*written room.*  
*by 2-1-72*

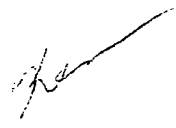
TO: MR. ROBERT P. BLANC

FROM: KENNETH M. REIM

SUBJECT: NAVAJO SALE NO. 6 & NO. 7, NEW MEXICO

In the December 29th Council of Executives meeting Mr. Kundert reported we are considering bidding on the Navajo Sale No. 6 in February and the Navajo Sale No. 7 in April-May. Mr. Sample requested that the Law Department be advised at as early a date as possible if our intention to bid is serious. They need time to file necessary papers for such a bid.

I recommend that as soon as the decision is made, we are seriously considering bidding on lands either on the No. 6 and/or No. 7 Sale, that the Law Department be immediately advised.



KMR:n

cc Messrs. John Mohar, Jr.  
J.C. Sample, Jr.  
C.H. Smith  
I.C. Trimble, Jr.

CVX 00952

S 431.331

CVX 00953

8239930230



# SKELLY OIL COMPANY

P. O. BOX 1650

TULSA, OKLAHOMA 74102

EXPLORATION DEPARTMENT

W. W. SIMPSON, VICE PRESIDENT  
JUDD H. OUALLINE, MANAGER  
GLENN E. MCKINLEY,  
MGR. FOREIGN & SPEC. PROJECTS

January 9, 1968

Minerals Exploration

JAN 11 '68

R. P. Blanc

J. M. Elias

S. Muessig



Dr. Siegfried Muessig  
Getty Oil Company  
Box 54050  
Los Angeles, California

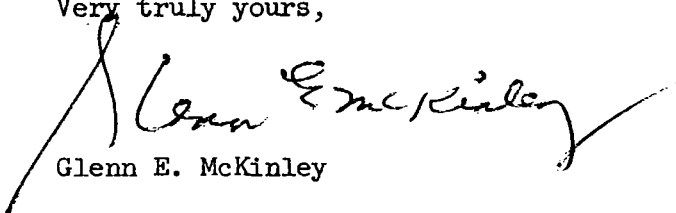
Dear Dr. Muessig,

Re: Uranium Joint Venture  
Northeast Jackpile  
Sandoval County, New Mexico

Pursuant to your telephone call late Friday, January 5, 1968, this will confirm that Skelly is in agreement with the operator's recommendation to acquire those lands discussed in Mr. Riddell's letter of December 18, 1967.

It is understood Mr. Nichols will negotiate on the 3,700 acres with a top of \$10 per acre and 10 percent royalty.

Very truly yours,

  
Glenn E. McKinley

GEM/pae

cc: Paul R. Riddell

CVX 00954



Salt Lake City, Utah  
June 21, 1968

TO: MR. PAUL A. RIDDELL  
FROM: JOHN B. SQUYRES  
SUBJ: DRILL-HOLE NUMBERING  
N. E. JACKPILE

Minerals Exploration  
& Mining Dept.

JUN 24 '68

*Return* →  
R. P. Blanc ✓  
J. M. Elias  
N. A. Grant  
S. Muessig (M)  
D. Niedermeyer  
S. Siegfus  
G. K. Coates  
P. A. Riddell  
J. H. Whitman  
*File*

Drill holes on the attached maps have been numbered to conform with the recently adopted numbering system. Copies of the map should be substituted for the old map accompanying the memo: "Proposed Drilling Program - N. E. Jackpile Area" dated May 29, 1968.

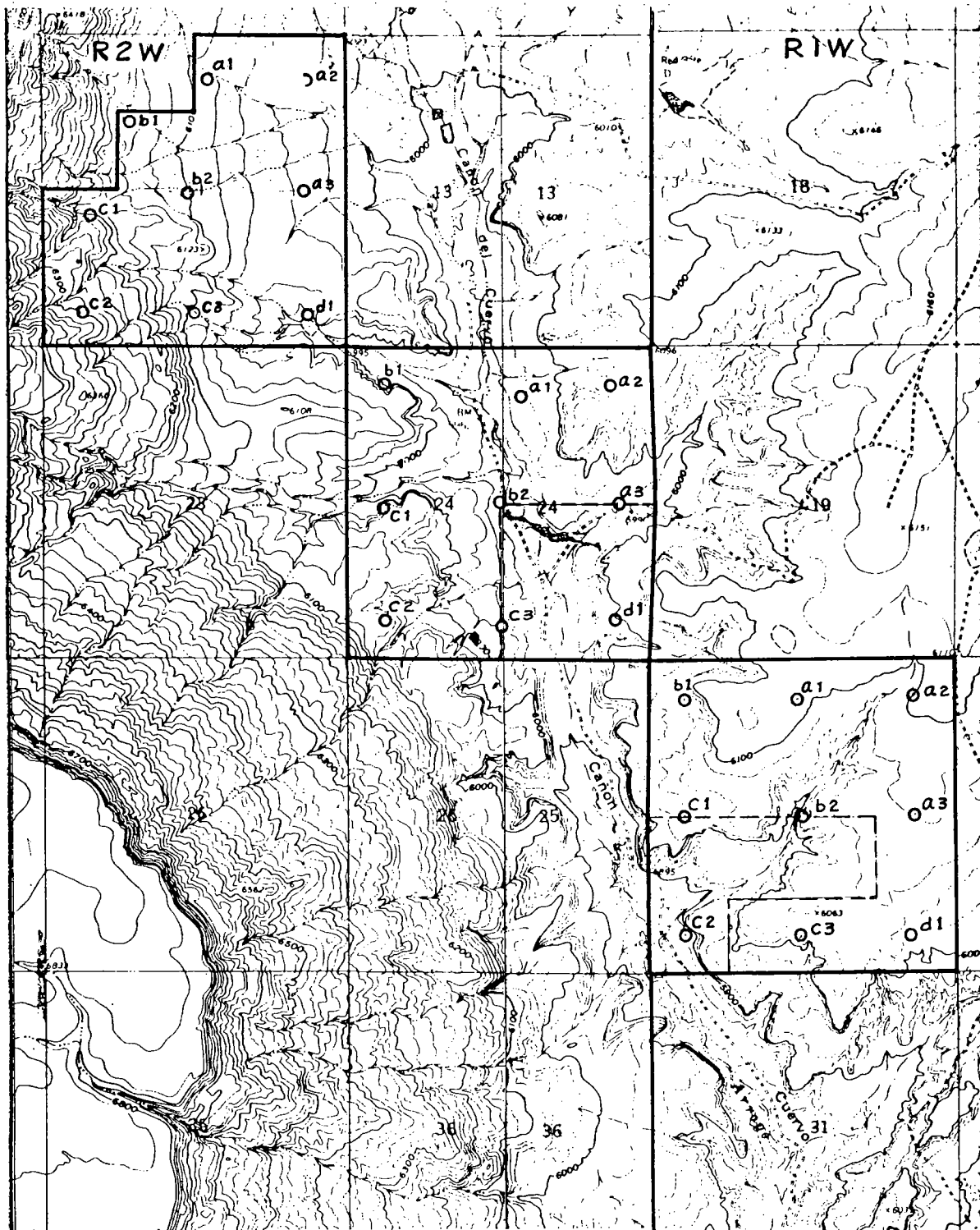
JBS:alr  
Attach.

cc: Mr. R. P. Blanc  
Mr. Glenn E. McKinley

*John Squires*

*Bob - for your info -  
reflects our standardization -*

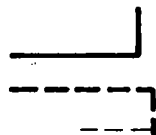
CVX 00955



GETTY OIL COMPANY  
JOINT VENTURE URANIUM EXPLORATION  
SALT LAKE CITY, UTAH

# PROPOSED DRILLING PROGRAM NORTHEAST JACKPILE AREA

SANDOVAL COUNTY, NEW MEXICO



GETTY CLAIMS  
FEE LAND

T  
14  
N

T  
13  
N

CVX 00956

November 5, 1968

Mr. G. E. McKinley  
Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma 74102

**Abandon Northeast Jackpile Property**  
**Sandoval County, New Mexico**

On September 13, 1968, we forwarded you a copy of ACT #9039 to cover the proposed abandonment of the Northeast Jackpile property in New Mexico and inadvertently failed to request your approval.

Justification for our recommendation to abandon was outlined in the memoranda forwarded to you with Mr. P. A. Riddell's letter of August 8, 1968.

In order that our files may be in order, we would appreciate approval of the attached copy of ACT 9039 covering this abandonment.

Yours very truly,

GFD:n  
Attachment

cc Mr. P. A. Riddell

CVX 00957

BOX NO. WIII

380

FILE FOLDER NO. 13

DOCUMENT COVER SHEET

The attached document was selected as potentially responsive to Westinghouse's Third Request for Document Production - 4th Quarter 1978.

This document should not be permanently removed from this folder nor should this sheet be permanently removed from this document.

- ☐ Responsive
- ☐ Confidential
- ☐ Subject to Secrecy Agreement
- ☐ Privileged
- ☐ Non-Responsive

CVX 00958

Minerals Exploration  
& Mining Dept.

AUG 12 '68

Salt Lake City, Utah  
August 8, 1968

R. P. Blanc	
G. F. Davidson	
N. A. Grant	
C. J. Kundert	
S. Muessig	
D. Niedermeyer	
S. Siegfus	

TO: MESSRS. ROBERT P. BLANC ✓  
GLENN E. MCKINLEY

FROM: PAUL A. RIDDELL

SUBJ: NORTHEAST JACKPILE PROPERTY, SANDOVAL COUNTY, NEW MEXICO

Squyres and Trimble sum up the situation on this property in the attached memorandums. The drilling was completely negative, and no merit can be foreseen at this time to holding the land. If, for tax purposes or otherwise, it would be desirable to relinquish this ground, this office is not adverse to such action. In any event, the fee acreage should be dropped prior to April 1, 1969, as rentals then become due.

I have asked Mr. Trimble to investigate the procedures necessary for abandoning acreage under the Joint Venture Agreement. This being our first abandonment, we will need to become acquainted with the required policy.

*Paul A. Riddey*

PAR:alr  
Attachments

*87,000 acres state & federal land  
27,000 acres state & federal land*

CVX 00959

Salt Lake City, Utah  
July 29, 1968

TO: MR. PAUL A. RIDDELL  
FROM: JOHN B. SQUYRES  
SUBJ: NORTHEAST JACKPILE PROJECT -  
SUMMARY AND RECOMMENDATIONS

The geologic setting and land status of the Northeast Jackpile Area were summarized in a memo dated October 24, 1967 (copy attached). During June, 1968, 25 holes, totaling 8950 feet were drilled on Getty-controlled land in the Northeast Jackpile Area. Figure 1 shows the extent of our holdings, the location of the drill holes, and an isopach map of the Jackpile sand, which was the chief exploration target in the area.

Results of the drilling were unfavorable. Radioactivity in all the holes was uniform and low. The Jackpile sandstone was less than 50 feet thick in most of the holes, and the maximum thickness in any hole was less than 100 feet. The known orebodies in the Jackpile sandstone all occur in areas where the sandstone thickness exceeds 100 feet.

Our drilling provides us with a nearly complete section across the Jackpile trend. Our drill data, supplemented by data from outcrop studies and Kermac drill holes on adjacent sections, indicates that the whole Jackpile trend between T. 12 N. and T. 16 N. is unfavorable.

During the program, four holes were drilled through the Westwater Canyon sandstone, which is also a potential host for uranium orebodies. The Westwater was found to be silty, very fine grained, and incompletely bleached in all four holes, and is therefore considered to be unfavorable in the Northeast Jackpile Area.

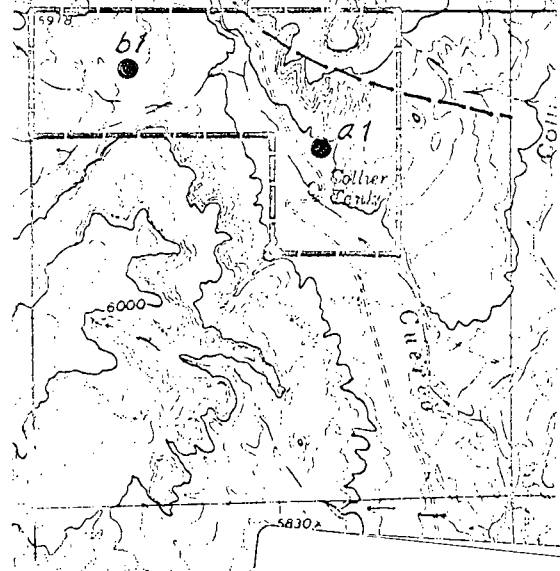
#### RECOMMENDATIONS

It is recommended that Getty Oil Company relinquish its holdings in the Northeast Jackpile Area, and that no further attempts be made to acquire property in the area between T. 12 N. and T. 16 N. Areas of possible future interest beyond these boundaries should not be condemned as yet, however, but should be judged independently.

*John B. Squyres*  
JOHN B. SQUYRES

JBS:alr  
Encl.

CVX 00960



SANDOVAL COUNTY, NEW MEXICO

Isopach

**CVX 00961**

S 403.181

CVX 00962

8239930230



S403.181

Salt Lake City, Utah  
February 5, 1969

TO: MESSRS. ROBERT P. BLANC  
GLENN E. MCKINLEY

FROM: PAUL A. RIDDELL

SUBJ: TEMPLE BAR PROPERTY, MOHAVE COUNTY, ARIZONA

Minerals Exploration & Mining Dept.	
FEB 7 '69	
R. P. Blanc	<i>PSB</i>
G. F. Davidson	
N. A. Grant	
C. J. Kundert	
S. Muessig	(10)
F. J. Nowak	
L. C. Rove	
S. Siegfus	
(File)	

This letter covers transmittal of Mr. Dickey's report of 1/30/69, on the subject property, and John Squyres' comments in a memo dated 2/3/69.

Our short drilling program did not find mineralization grades sufficiently high to justify continuation of the drilling beyond the initial wide-spaced grid. It appears logical that we terminate our interest in the ground. A request for abandonment will be forthcoming in the near future.

The program was executed quickly, efficiently and economically. Our relationship with the National Park Service officials and personnel throughout was good, and we have a letter from them expressing their appreciation for the manner in which the program was conducted.

I have discussed the course of the program in detail with John Squyres. Looking back, I cannot see any way we could have determined that the findings behind the rim would be of low grade. Our quantitative knowledge of the leaching and depletion of surface values through weathering was not sufficient to permit an assumption that no or little leaching had taken place. We were, of course, betting that the crop was lower grade for these reasons.

Now we do have a quantitative comparison to use in the next problem that involves similar geology and chemistry. It may be desirable to collect a few more surface chip samples to supplement the grab samples that were previously taken.

*Paul A. Riddey*

PAR:alr  
Attachment

CVX 00963

TEMPLE BAR PROSPECT  
FINAL REPORT

BY  
ROBERT H. DICKEY

1/30/69

CVX 00964

Salt Lake City, Utah  
February 3, 1969

TO: MR. PAUL A. RIDDELL  
FROM: JOHN B. SQUYRES  
SUBJ: TEMPLE BAR PROSPECT

The attached report by Mr. Robert Dickey covers the history and present status of the Temple Bar Prospect, Arizona. It is clear that the grade of the mineralized areas is far below that which would support a mining operation, and there is little likelihood that further exploration would lead to the discovery of higher-grade material. I therefore recommend, with Bob, that we drop our lease on the property.

I find myself in mild disagreement with Bob in the matter of further exploration of the Lacustrine environment, however. Certainly our results to date do not justify the expenditure of any large amount of time and effort on a continued systematic study of Lacustrine sediments per se, and I do not advocate any such program. However, I believe we should not arbitrarily eliminate any potential environment from our interest. Rather, I suggest that we bear our previous experiences in mind and perhaps adopt a somewhat more conservative attitude, but still continue to judge each prospect on its own merit.

JOHN B. SQUYRES

JBS:alr  
Attachment

CVX 00965

Salt Lake City, Utah  
January 30, 1969

TO: MR. JOHN B. SQUYRES  
FROM: ROBERT H. DICKEY  
SUBJECT: FINAL REPORT - TEMPLE BAR PROSPECT

SUMMARY:

Insufficient mineralization was encountered in 16 new drill holes and 14 existing drill holes to warrant any further work on this prospect. Our 2936 feet of new drilling on West and East Mesas, together with 781 feet of probing in existing drill holes on East Mesa, did not prove out our expectation of a large thickness of low grade material. We did find lower grades-- .01 to .05 percent  $U_3O_8$  (with an average nearer .01)--spread over a greater thickness than was originally anticipated. It was felt that the primary 16 drill-hole program disproved the possibility of an economic mineralized body on this lease. Further exploration has been canceled and the lease will be dropped.

TEMPLE BAR PROSPECT, LAKE MEAD NATIONAL RECREATION AREA, ARIZONA

ACQUISITION:

The initial interest in this property came from our work in the uranium/lake bed environment. We indicated our desire to obtain a lease offered by Zanzibar Investments Inc., with the understanding that surrounding acreage would be included. The acceptable offering included five (5) adjoining leases comprising 2640 $\frac{1}{2}$  acres for an advance royalty payment of \$10,000.00 plus royalties. Lease costs were .25/acre/year rental plus an initial bonus of \$25 per 640 acre parcel, with stringent restoration requirements under the Recreation Area jurisdiction.

PRELIMINARY WORK

Ground work for the drilling program was carried out during 1968. A triangulation net was surveyed and aerial photography flown. Reconnaissance geologic and radiometric mapping was done over the lake bed outcrop. Preliminary assays were made on outcrop samples. Information from the initial work done on the property during the 1950's was found to have been destroyed. For this reason, the probing of old drill holes was to be an essential part of the initial testing program.

CVX 00966

NATIONAL PARK SERVICE:

The United States Department of the Interior approval was obtained for an initial exploration program of 73 drill holes, located on East and West Mesas. Minimal ground preparation was carried out and a drill rig moved to the site on January 3, 1969. The primary program of 16 holes was completed January 15, whereupon the exploration was discontinued. Mr. Robert Mason remained at the site to complete the drill holes and to satisfy the National Park Service that a proper job was done to restore the lease site. Our current good relations with the Park Service were enhanced by an initial cleanup of the site (necessitated by work during the 1950's). This action took minimal bulldozer time away from the necessary pre-drilling ground preparation.

GEOLOGY AND MINERALIZATION:

Tertiary lake beds, of probable Miocene Horse Springs formation equivalence, disconformably overlie the eroded surface of a thick basalt flow sequence. These lake beds are composed of up to 300 feet of siltstone, with some marlstone interbedded. Uranium mineralization probably took place after deposition, with most radiation intercepted in the lower 150 feet of the lake bed section. The lake beds structurally "drape" over the basalt topography, with subsequent synclines in basement lows and anticlines on basalt basement highs.

No attempt has been made to correlate stratigraphy or mineralization between drill holes, since the assays and gamma logs were thought to indicate no possibility of sufficient grade or thickness at the site to warrant further exploration.

Good correlation was found between the expected percentages of chemical  $U_3O_8$  and gamma log signatures in holes on West Mesa. This apparent equilibrium was carried from the West Mesa portion of the lease onto East Mesa, where no assays were taken. Average grade of all mineralized intervals is in the range of .010 to .013 percent  $U_3O_8$ . The assay results are included in the data pages at the end of this report.

DRILLING:

The drill pattern sequence was designed to allow us to close down an anticipated mineralization. The initial widespread centers covered the ground behind the most radioactive portions of the outcrop. Since our initial program did not yield encouraging results, it was felt that more drilling at less favorable locations was unwarranted.

During the 12 days of active drilling, a total of 2936 feet was completed. The first 11 holes were bottomed in the basement basalt, with the remaining five holes carried to the base of the mineralized interval. Mineralization was encountered at depths of one to 298 feet. Drilling costs were very close to the anticipated \$1.00/foot.

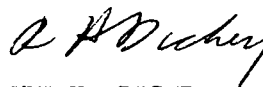
CVX 00967

CONCLUSION:

No further work is anticipated in any lake bed environments which are devoid of the coarse clastic section thought necessary to provide adequate "plumbing" for large orebody accumulation.

The possibility existed at this locality for a large tonnage of "one pound" ore. Stripping conditions are ideal, with a bucket wheel excavator or bottom scraper fleet system being perfectly matched to the probable ease of dirt moving. However, the local mineralization proved to be less than 10 percent of the necessary anticipated ore grade. No further work is considered necessary at this site.

Respectfully submitted,



ROBERT H. DICKEY

RHD:alr

CVX 00968

TEMPLE BAR REPORT

Drill Hole Mineralization

Hole No. B-30-20-22ACC8

156-159	.014%	eU <sub>3</sub> O <sub>8</sub>
160-167	.012	

Hole No. B-30-20-22DBB15

Barren

Hole No. B-30-20-22BDC6

Gamma		
156-165	.014%	eU <sub>3</sub> O <sub>8</sub>
167-169	.014	
172-173	.017	
174-175	.014	
177-180	.015	
182-191	.012	
204-216	.010	
230-232	.030	

Assays	
210-215	.007% Chemical U <sub>3</sub> O <sub>8</sub>

Hole No. B-30-20-22CAB21

Barren

Hole No. B-30-20-22BDC20

Gamma		
120-122	.020%	eU <sub>3</sub> O <sub>8</sub>
130-134	.010	
136-144	.010	
147-157	.011	

Assays	
120-125	.015% Chemical U <sub>3</sub> O <sub>8</sub>
130-135	.010
150-155	.010

Hole No. B-30-20-22BDC19

Gamma		
150-151	.010%	eU <sub>3</sub> O <sub>8</sub>
155-158	.014	
159-164	.015	
168-174	.011	
176-177	.020	
179-180	.018	
181-184	.020	
185-186	.017	
186-187	.020	
188-189	.035	
192-194	.012	
196-198	.037	
203-204	.018	
208-210	.020	
210-220	.010	
241-243	.022	
250-253	.011	
257-264	.010	

Assays	
160-165	.012% Chemical U <sub>3</sub> O <sub>8</sub>
180-185	.018
185-190	.015

CVX 00969

Hole No. B-30-20-22BCD23

Gamma	
132-135	.025% eU <sub>3</sub> O <sub>8</sub>
136-137	.015
138-140	.023
141-144	.017
146-148	.021
151-163	.015
164-167	.058
168-170	.017
173-175	.012
184-186	.035
258-263	.012

Assays

130-135	.010% Chemical U <sub>3</sub> O <sub>8</sub>
135-140	.012
165-170	.029

Hole No. B-30-20-22BCD24

135-138	.019% eU <sub>3</sub> O <sub>8</sub>
150-156	.014
166-171	.011
195-197	.012
212-214	.014
234-236	.041
248-251	.021

Hole No. B-30-20-21ADD2

119-122	.010% eU <sub>3</sub> O <sub>8</sub>
136-146	.017
148-151	.024
152-162	.010
173-176	.041
186-188	.020
208-210	.010
232-234	.027

Hole No. B-30-20-22CBB30

132-134	.017% eU <sub>3</sub> O <sub>8</sub>
138-142	.011
143-152	.014
155-158	.020
163-164	.019
166-174	.011
194-201	.011
235-236	.014
238-240	.017

Hole No. B-30-20-22ACB13

133-135	.031% eU <sub>3</sub> O <sub>8</sub>
150-156	.027
158-163	.020
170-174	.014
180-182	.031
198-199	.029

CVX 00970



Hole No. B030-20-22ACB13 (cont'd)

201-204	.024
205-207	.054
210-212	.029
219-223	.029
261-267	.017
275-280	.012
292-294	.011
296-298	.011

Hole No. B-30-20-22ACC10

7-9	.22% eU <sub>3</sub> O <sub>8</sub>
11-15	.013
17-18	.026
21-28	.011
30-31	.021

Hole No. B-30-20-23DBC1

8-12	.029% eU <sub>3</sub> O <sub>8</sub>
13-15	.015
17-21	.025
24-25	.023
27-31	.048
34-35	.047
43-44	.017
48-49	.011
59-61	.051
64-68	.010
80-86	.018
81-82	.012
84-86	.018
100-104	.012
113-115	.018
116-117	.012

Hole No. B-30-20-23DBC2

3-4	.027% eU <sub>3</sub> O <sub>8</sub>
7-10	.033
19-21	.041
25-26	.017
26-27	.029
38-50	.021
51-52	.042
52-53	.052
66-72	.021
75-76	.016
80-81	.017
84-85	.042
88-92	.015

CVX 00971

Hole No. B-30-20-23DCA3

4-5	.014%	eU <sub>3</sub> O <sub>8</sub>
13-16	.009	

Hole No. B-30-20-23DCA4

2-6	.022%	eU <sub>3</sub> O <sub>8</sub>
37-38	.010	
50-51	.015	
53-54	.024	
58-59	.023	
61-62	.010	
63-64	.018	
66-68	.015	
69-70	.050	

CVX 00972

**PARTIALLY SCANNED  
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for partially scanned image(s).

**CVX 00973**

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